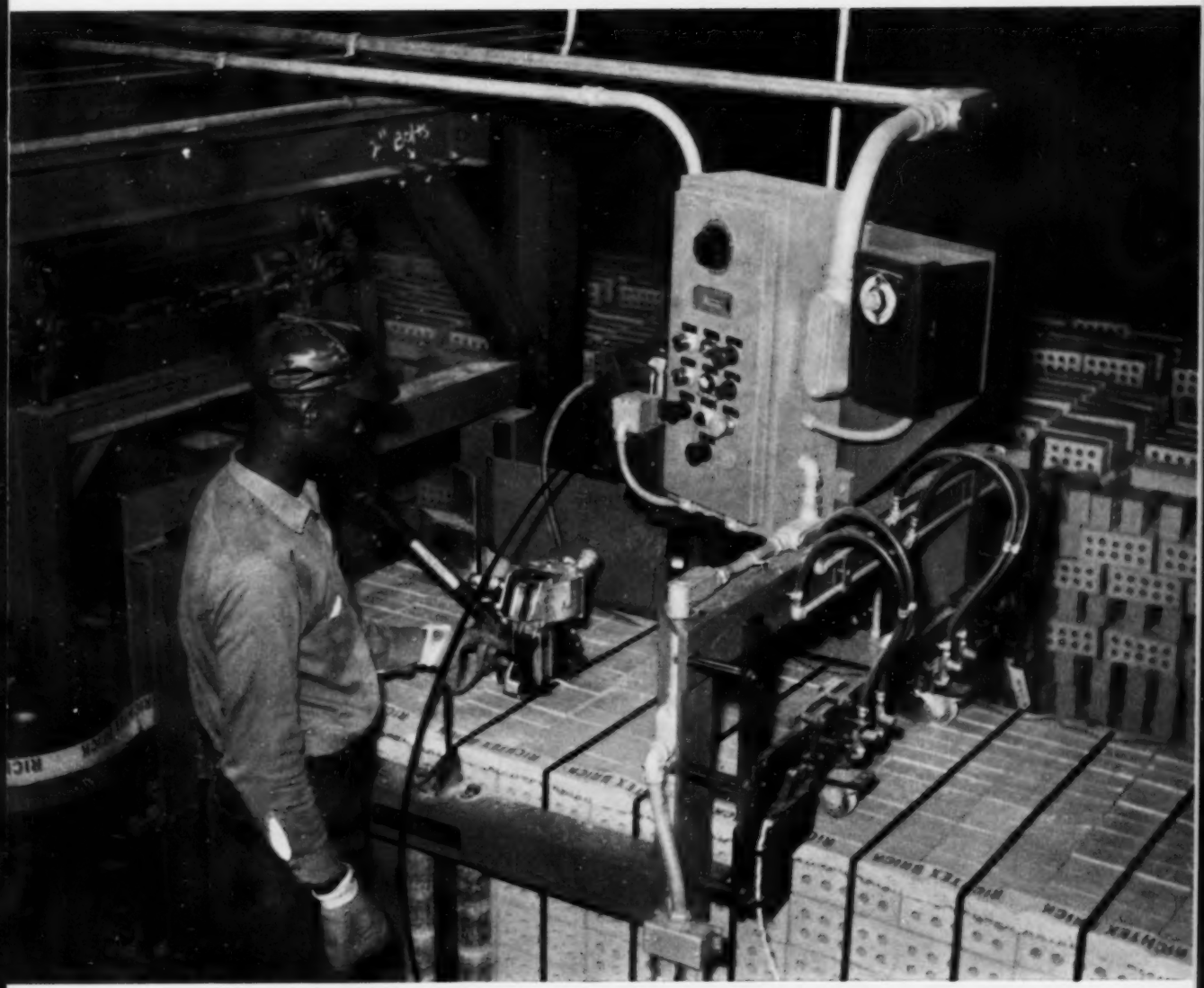
LEADING CLAY JOURNAL OF THE WORLD

JUNE, 1961/75c

Brick & Clay RECORD

A CAHNERS PUBLICATION

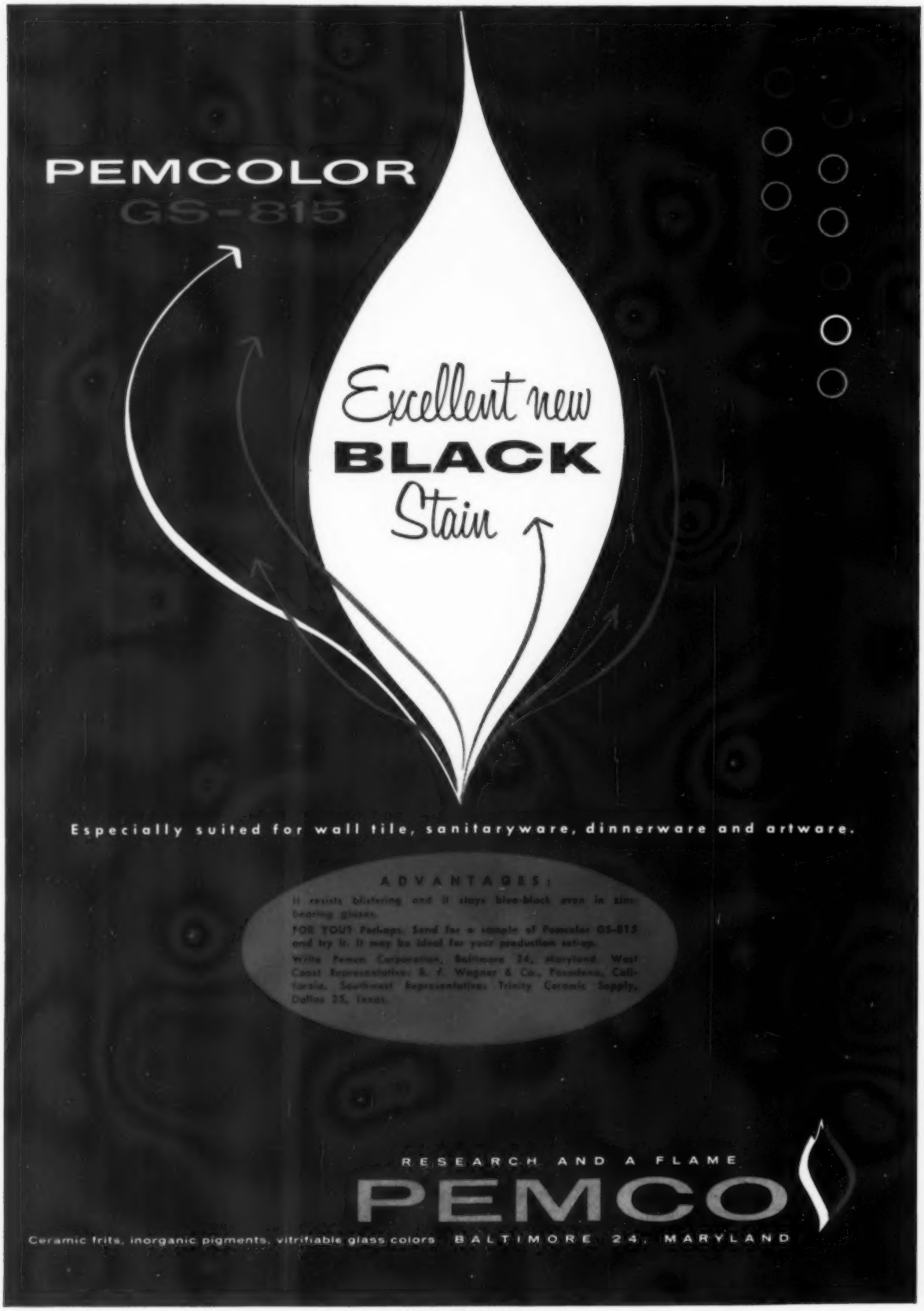


Rapid Packaging at Columbia Brick & Tile—Page 76

See Capacity Production by End of '61

Convert Brick Plant to Lightweight Aggregate

Machine Packages 100 Brick Every 19 Seconds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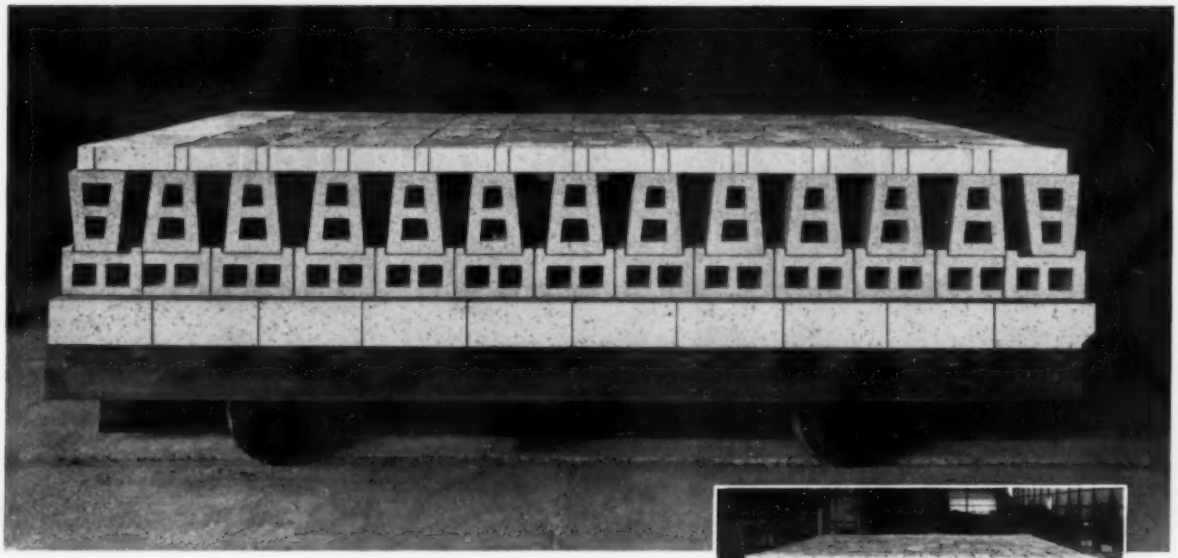

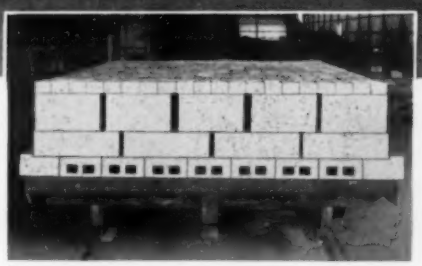

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TOP DECK—PACO 9" floor brick with two end courses of "A" girders, turned upside-down. The two end courses of floor brick are in a 10⅝" length to make car dimensions come out exactly right.

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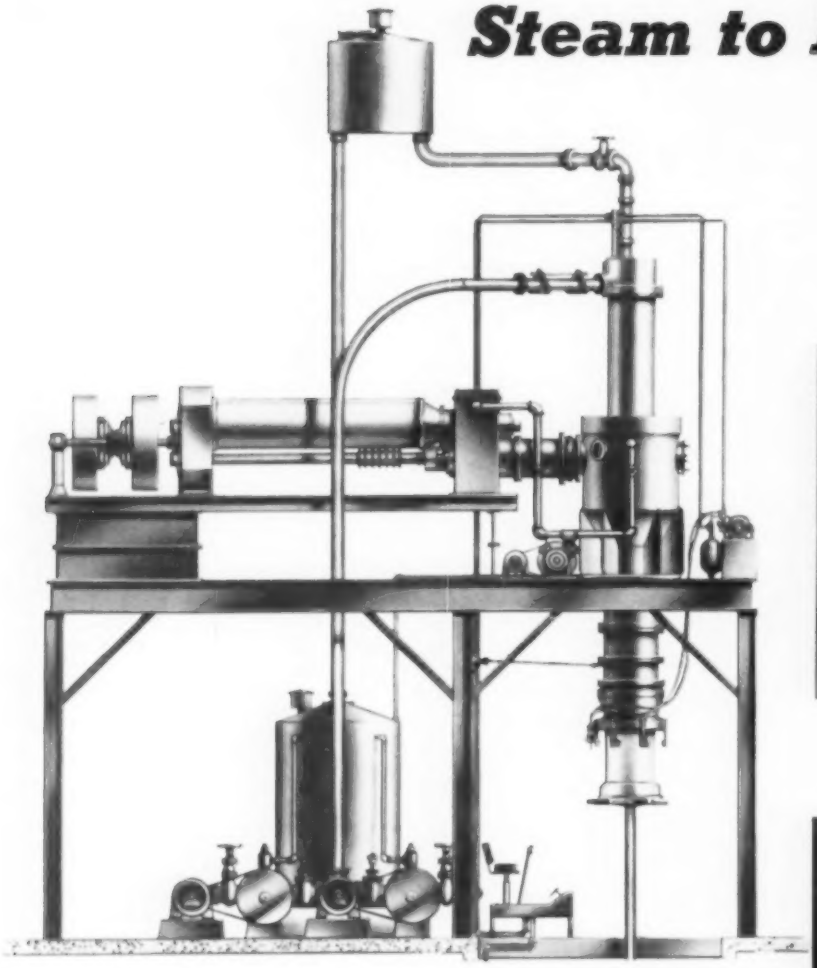
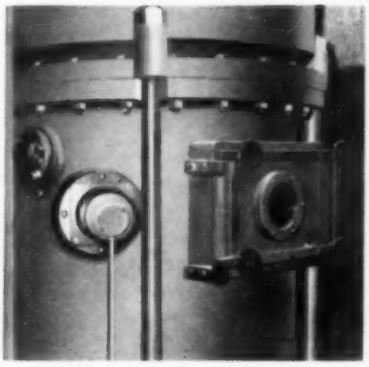
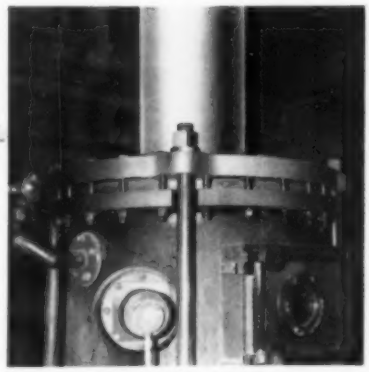




Steam Press
Before Conversion



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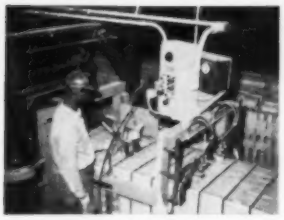

THIS MONTH'S COVER

Columbia Brick & Tile Co.'s new packaging machine in operation. The machine, in talled by Signode Steel Strapping Co. and Manufacturers Equipment Co., is designed to package up to 125 brick per pack every 19 seconds. Read the complee description of the operation beginning on page 76.

A CAHNERS PUBLICATION

Brick & Clay RECORD

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Leading Clay Journal of The World
Established 1892; *Now in 69th Year*

The magazine of brick, drain tile, structural tile, clay aggregate, terra cotta, roofing tile, refractories, clay pipe, and abrasives.

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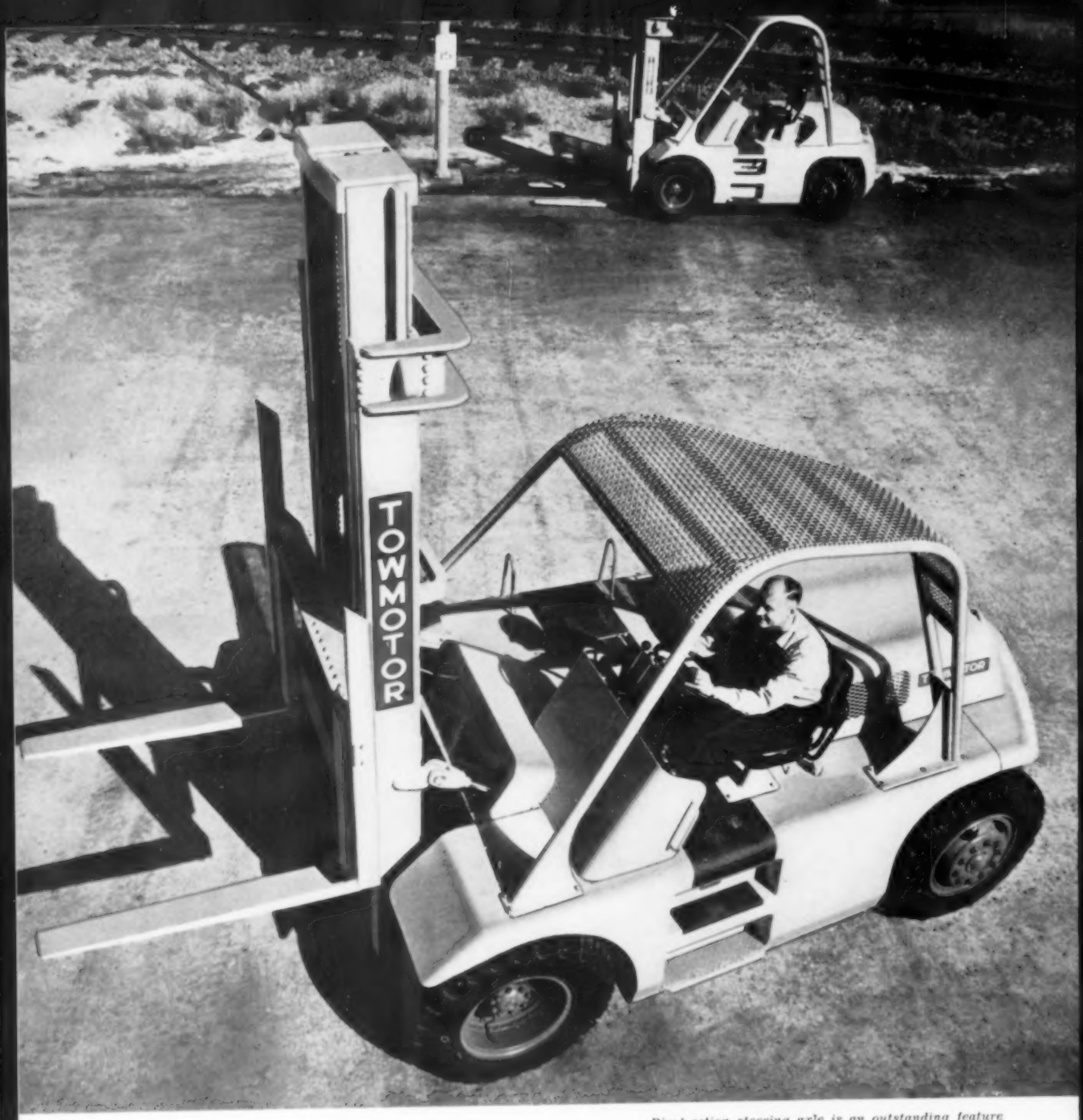
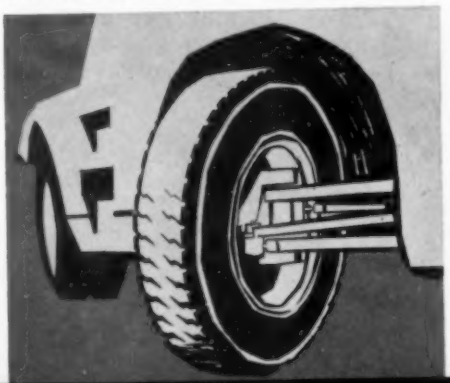


Pivot-action steering axle is an outstanding feature of new Towmotor "Monarch" Series fork lift trucks (above), with load capacities up to 24,000 pounds. Fast, smooth maneuvering results from Monarch's wider track axle pictured below. It pivots in rubber to absorb road shocks.



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"6,000,000 UNIT INCREASE WITH ADDITIVE-A®" —says Indiana brickmaker.

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For further information on Additive-A, write to:
Chemical Products, Department No. BCR-61
Kimberly-Clark Corporation,
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Kimberly-Clark Corporation Contributing Associate S C P I

Circle Service No. 14

← Circle Service No. 13

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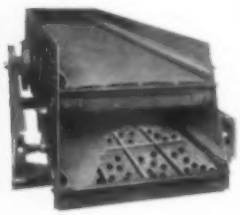

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Letters

to the editor

Damage to Fruit

Editor, BRICK & CLAY RECORD: As a subscriber to your very excellent publication, I am taking the liberty of mentioning for your consideration a rather unique production problem confronting our operation here in Grimsby, Ontario.

We are situated in the heart of a fruit belt (peaches), in fact our 75 acres was and still is in part of the orchard. I mention this to emphasize the importance of the trees, they are not remote, we live among them. Perhaps you have guessed our problem by now, fruit damage caused they say by fluoride gases emitted by our stack, not from coal or natural gas firing, but by the chemical action of our clay while under fire in our kilns. This "fluoride", I am led to understand, is ever present in the air in a more or less degree, but our little boost to it apparently creates a soft spot on the peach which ripens long before its time and creates in effect an over-ripe green peach.

Our own Department of Health, Air Pollution Branch, has been working on this for two years now and their charts are beginning to show a pattern of fault. They are not saying yes or no, but forewarned is forearmed, thus this letter to you.

Perhaps in your vast coverage you have been contacted by some brick or tile plant that has had a similar problem and have discussed methods of correction with them. If so, we would be most grateful if you could put us in touch with them. The only hint we have had from this end is to run our smoke through lime filters. Any thoughts on this will be most welcome.

Many thanks for a most educational magazine. We look forward to hearing from you and appreciate very much the time and effort you spent on our behalf.

Grimsby Tile Ltd.

Editors note: The editors of BRICK & CLAY RECORD *have given Grimsby Tile their recommendation and put*

them in touch with several people who might be able to help them solve this problem. Can you help?

Shrinkage in Block

Editor, BRICK & CLAY RECORD: I read your very good editorial in the December issue and we would have been on the market with a clay block long before this had we been able to lick the shrinkage problem. Perhaps a word "shrinkage" is incorrect. It may be that the fired block is smaller than the mold size because of a collapse of the cells in the expanded material. We have used several grades of expanded material as well as several binder clays and have fired the block in several of our kilns. The so-called shrinkage is not great, but it is sufficient to develop a size differential with any variation whatever in the firing.

. . . At our Mechanicville, N. Y. plant we have been using a tunnel kiln for firing low-temperature double-fired glazed brick set on the kiln cars one high. These glazes require very accurate firing and in this manner we have been successful.

Clarence P. Austin
Binghamton Co.
Binghamton, N. Y.

Here is evidence of more work being done on the development of a clay block. We would like to hear about the experiences of other people in the industry with this product.

Multicored Brick

Editor, BRICK & CLAY RECORD: On page 4 of the June 1958 BRICK & CLAY RECORD I wrote a report about the progress in European countries in manufacture of multicored brick.

Some factories got in contact with me and now I am happy to give you a statement out of one letter to me from an important manufacturer here in the United States:

"These multicored brick have been a standard production item with this company for about one year now and have been very popular with the architects and the brickmasons in this area who have used them."

Joseph Skaletz
Chicago, Ill.

Anyone interested in further information on this subject is invited to contact Mr. Skaletz through this magazine.

3 *outstanding features make this*

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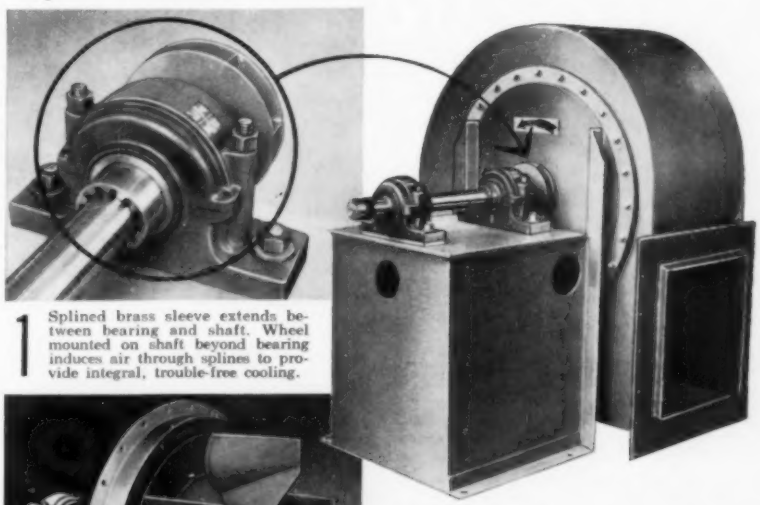
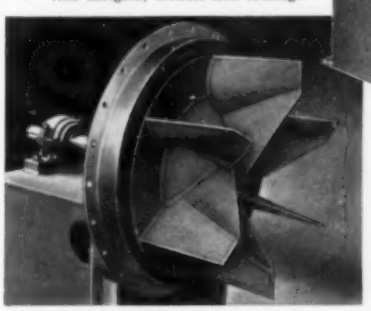
BEST for recirculating hot air in kilns—up to 1650°F.



1 Splined brass sleeve extends between bearing and shaft. Wheel mounted on shaft beyond bearing induces air through splines to provide integral, trouble-free cooling.



2 Cartridge type wheel assembly is removed from the drive side of the exhauster. Inspection and maintenance of both wheel and exhauster is simplified and speeded, without entering kiln.

3 Steel outer skin and alloy inner casing are separated by high-temperature insulating material, minimizing heat loss in kiln air, and reducing heat radiation and conduction to other parts.

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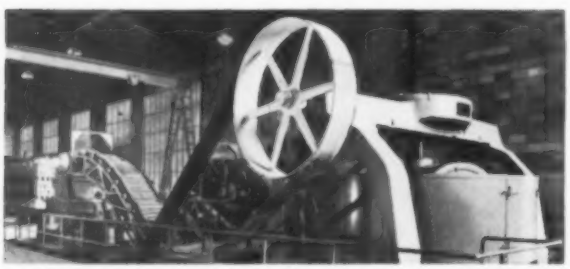
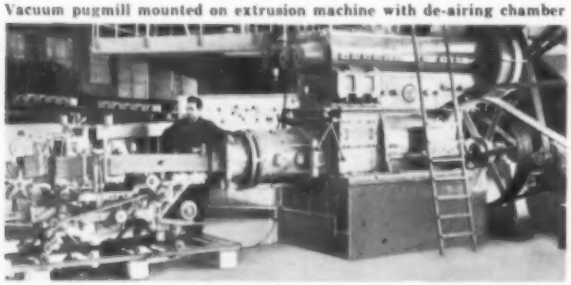


Edgerunner with overhead drive for wet pan grinding and mixing

Vacuum pugmill mounted on extrusion machine with de-airing chamber



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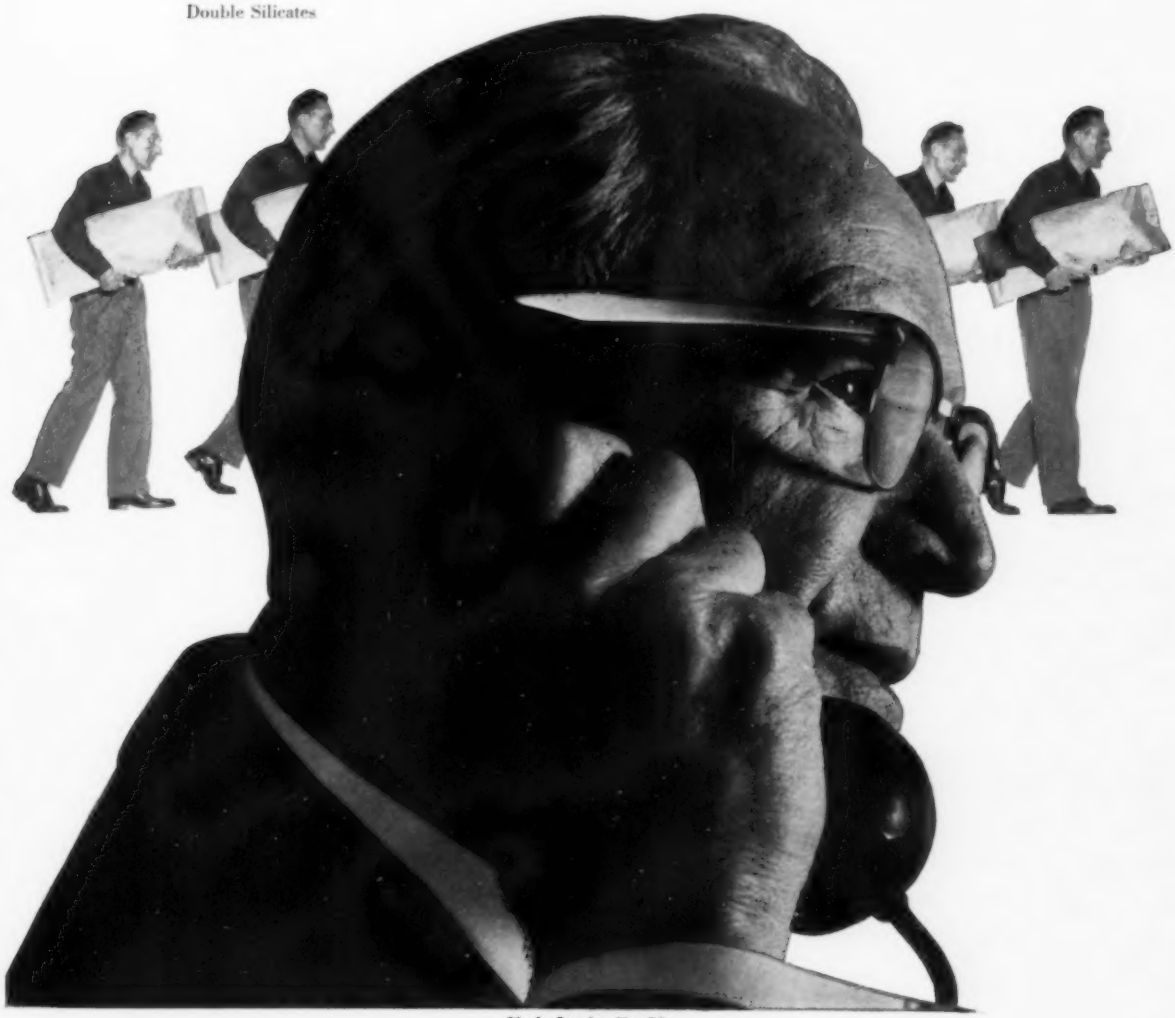

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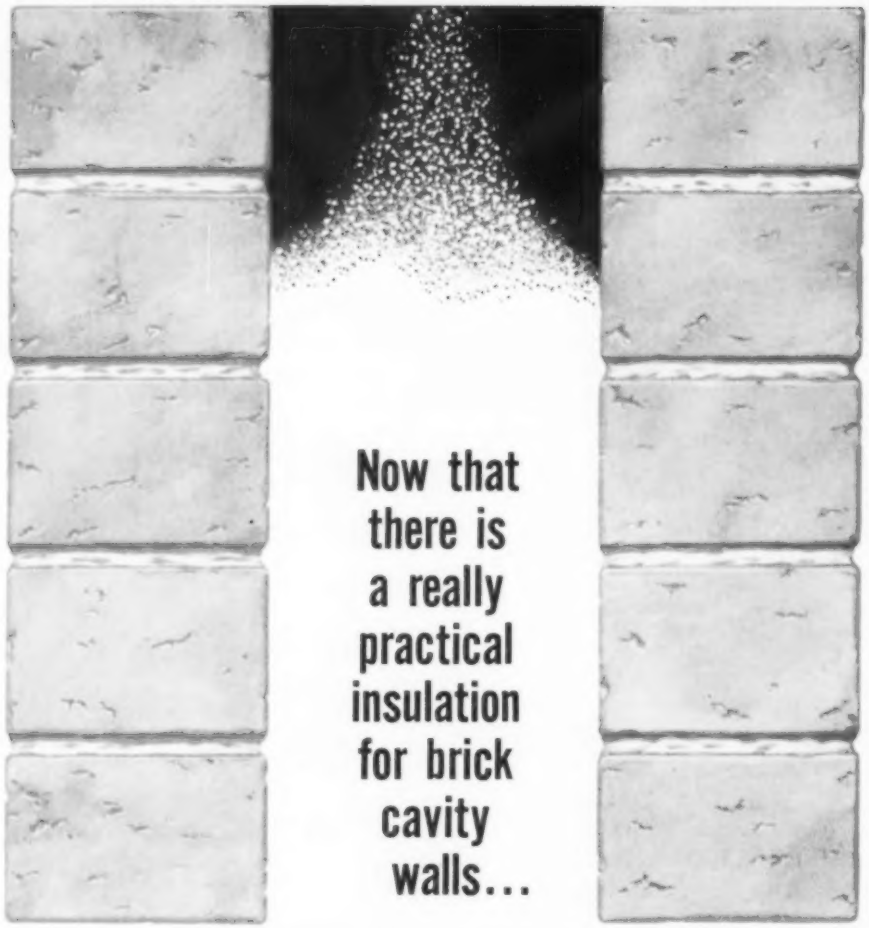

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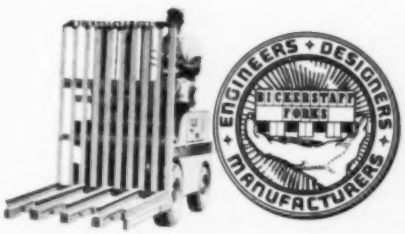

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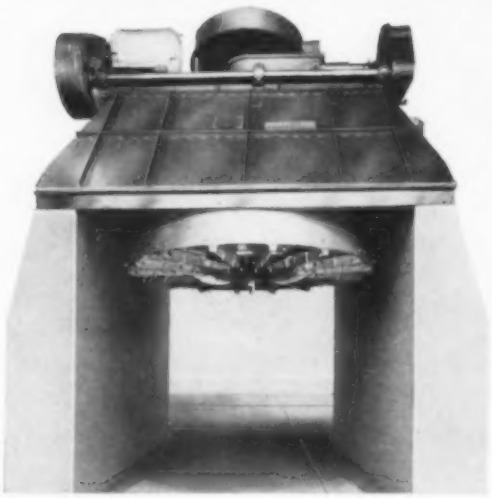
are our *business*

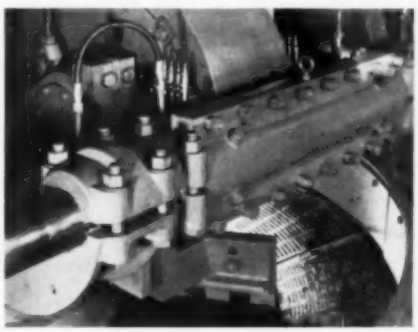


Over-all view of Chambers 10' Dry Pan with covers shows the accessibility and flexibility of Chambers' suspended design.

Below, right. (1) Tilted Ni-Hard screen plates give you real increases in productivity through their higher screening efficiency. Slower travel of the individual grains across the screens permits higher operating speeds and, hence, higher production. (2) Supporting arms of Ni-Hard screen plates are now steel, eliminating one more source of breakage. (3) The cake-breaking and deflecting plow, with its toothed Ni-Hard blade, is clearly shown in the center of the picture. Adjustment for vertical position, of course. (4) Muller yokes are now of solid steel, following our design philosophy that cast iron has no place in machines for brick, tile, sewer pipe, or refractories. (5) Clearly visible are our replaceable ⅝"-thick steel curb-liner plates.

EASY CONVERTIBILITY

While productivity and performance naturally came first in our program, we knew that you, our customers, would give priority also to convertibility, either way, from rim-discharge grinder to dry pan, and back. So we made both machines completely convertible in your plant, if desirable.



Above, left. (1) Our complete re-designing program included spacing the mullers farther apart, thus increasing their rotational speed and, consequently, the speed of flow of material through the grinding process. (2) 16"-face, 5"-thick Ni-Hard muller tires are designed for quick replacement by means of double wedges and locking thru-bolts. (3) New 2-piece plow design for adjustment across the face of the muller to even out abrasion patterns, with a swivel feature for changing the contour and flow of material into the muller path. (4) Note in lower right-hand corner of photo separate Ni-Hard-faced steel plow for breaking up materials that tend to cake, and for deflecting them to the screen area. (5) Two heavy-duty air cylinders per muller match exact grinding pressures to material characteristics and moisture content at the turn of a valve. (6) Adjustable lubricators operate from a centralized system to inject exact quantities of grease required for muller roller bearings and for vertical shaft and muller yoke bushings.

SERVING YOUR INDUSTRY FOR OVER 100 YEARS

CHAMBERS BROTHERS CO.

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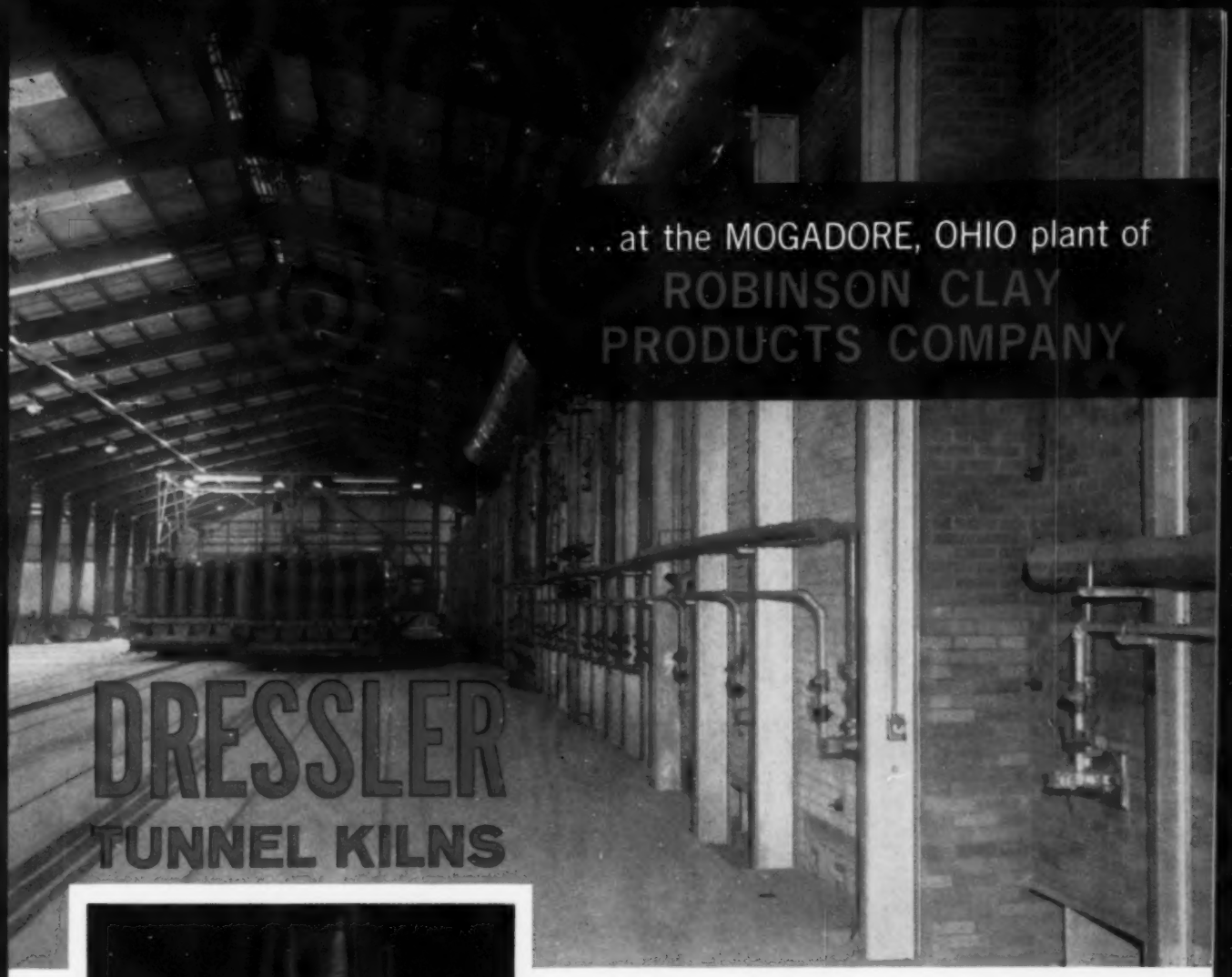


. . . at the MOGADORE, OHIO plant of
ROBINSON CLAY
PRODUCTS COMPANY

DRESSLER
TUNNEL KILNS

One of the Largest Pipe Kilns Ever Built

featuring the DRESSLER BRINEGLAZE Salt Glazing System

This 465 ft Dressler Tunnel Kiln, holding 43 cars with setting areas of 10 ft 6 in. square and firing pipe up to 12" diameter, has a capacity as high as 120 tons per day of 8 in. pipe in 5 ft lengths—one of the largest kilns ever constructed in the industry. With the patented Dressler BRINEGLAZE system, salt glazing is under completely automatic time-cycle control. A superior glaze results, at greatly reduced firing costs. The double-track preheater, shown at left, is 55 ft long. It dries the setting rings and preheats the ware to 360°F before entry to kiln.

• *May we discuss your projected production requirements?*

ENGINEERING — Swindell-Dressler Corporation provides a complete engineering service for the ceramic industry in the design and construction of new plants, and modernization of existing facilities. Consultations arranged gladly on request.

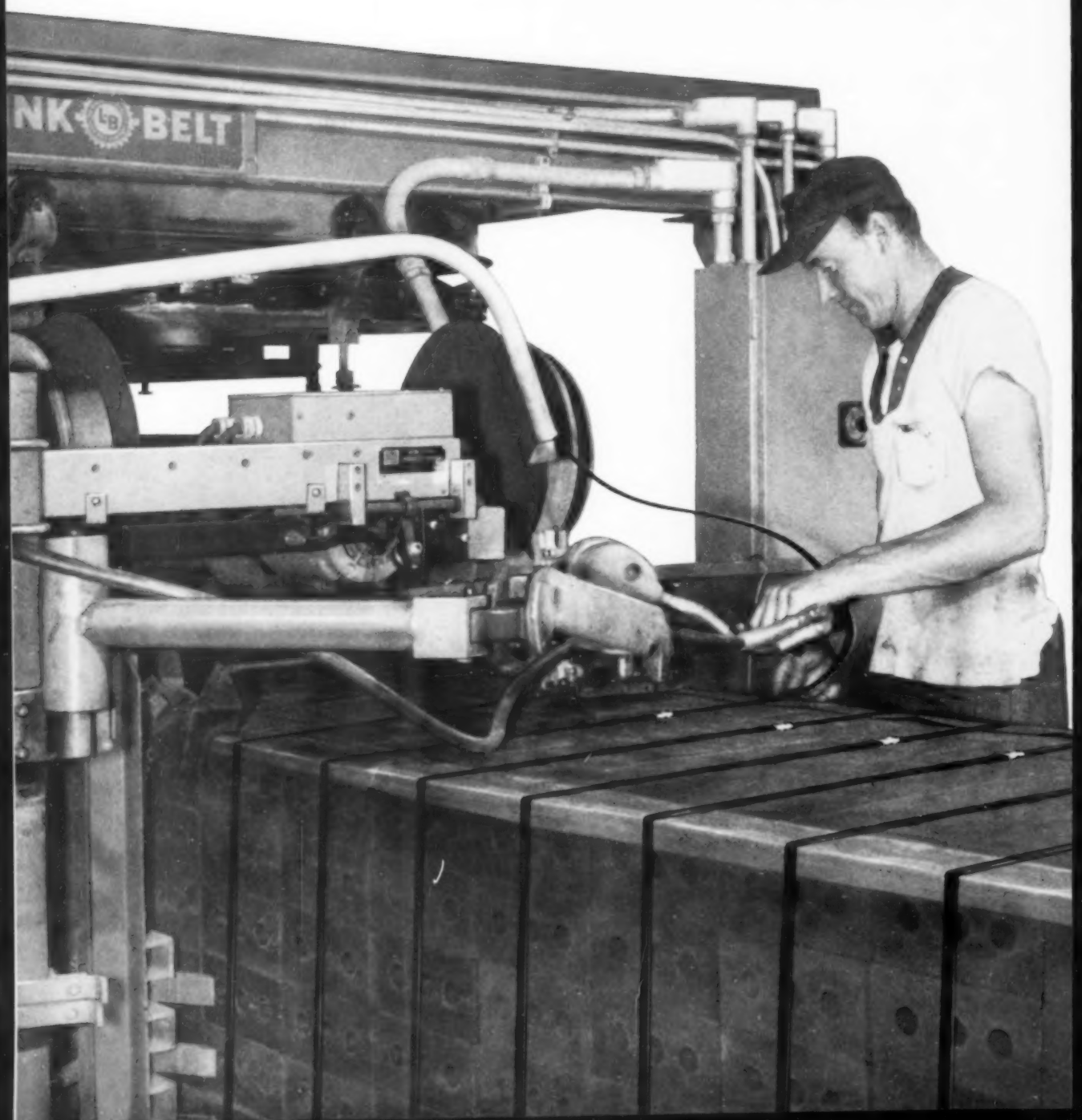
SWINDELL-DRESSLER CORPORATION

ENGINEERS • CONSTRUCTORS • MANUFACTURERS

PITTSBURGH 30, PA.

The SWINDELL-DRESSLER CORPORATION of Canada, Ltd., Ottawa, Canada

JOIN THE EXCLUSIVE CIRCLE OF FIRMS PACKAGING UP TO



130,000 BRICK PER DAY!

Tall order, packaging 130,00 brick per day! It was even a physical impossibility for large producers, like Denver's Robinson Brick & Tile Company, without a battalion of men. But, they can do it now, *automatically*, with the Link-Belt/Acme Steel brick packaging system. This machine and only a half dozen men can turn out perfectly stacked, tightly strapped 100-brick packs every 22 seconds!

Thanks to this *first* practical and proved method of packaging brick mechanically, every producer can take full advantage of their kiln capacity. (Robinson packs a full week's kiln output in five days.) You can double, even triple shipments . . . eliminate panic, extra personnel and overtime during peak periods. And space saving packs can be stored in neat rows, ready for fast, mechanical loading on a moment's notice.

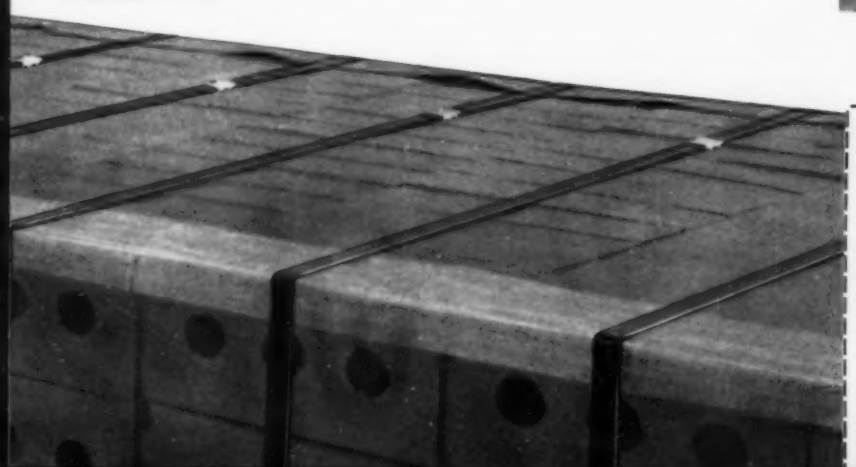
Other installations include Owensboro Brick & Tile Co., Owensboro, Ky.; Henderson Clay Products, Henderson, Tex.; Jova Brick Works, Roseton, N. Y.; Alton Brick Co., Maryland Heights, Mo.; Nebraska City Brick & Tile Co., Nebraska City, Neb.

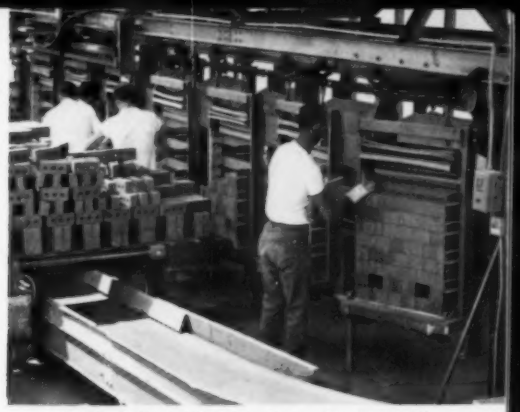
The exclusive circle is expanding. Are you ready to join it? Make arrangements to view our special color film showing the complete Link-Belt/Acme Steel brick packaging system in operation. Call your Acme Idea Man, or return the coupon for your film reservation and reports illustrating how this equipment is serving major producers.

ACME STEEL

IDEA LEADER IN

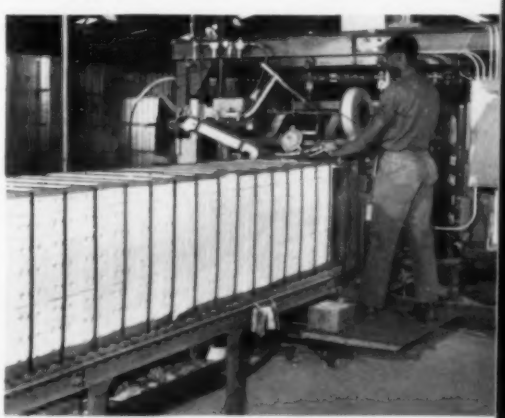
STRAPPING





Robinson Brick & Tile Co., Denver, has been packaging 65 kinds of standard, Norman and Roman sizes for over two years with their Link-Belt/Acme Steel machine.

Owensboro Brick & Tile Co., Owensboro, Ky., doubled daily shipments after they installed the Link-Belt/Acme Steel brick packaging system three years ago.



Henderson Clay Products, Henderson, Tex., experienced such excellent results with their first machine, they installed a second—now package a quarter million brick daily.

Acme Steel Products Division
ACME STEEL COMPANY
Dept. BCS-61, 135th St. & Perry Ave., Chicago 27, Ill.

☐ Contact me for movie arrangements.
☐ Send reports of your brick packaging system in use.

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Title_____

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BUILT TO YOUR SPECIFICATIONS

MILLER "Accelerated" Kiln Cars

MILLER KILN CARS WITH TIMKEN TAPERED BEARINGS PROVIDE:

- ✓ Easy maneuvering
- ✓ Smooth, continuous operation
- ✓ Trouble-free service
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Whatever your kiln car needs, regardless of who made your tunnel kiln, Miller can furnish any type Kiln or dryer car according to your specifications. And, with Timken Tapered Roller Bearings, you get years of smooth, anti-friction performance.

Easily moved by one man, when fully loaded, Miller built Kiln cars have "accelerated" maneuverability . . . really measure up to your demands.

Have Miller engineers analyze your kiln car needs. Complete information and prices submitted without obligation.

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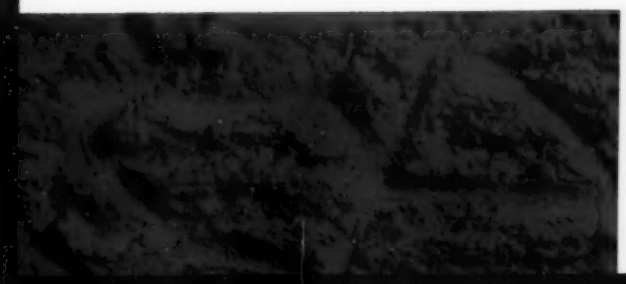
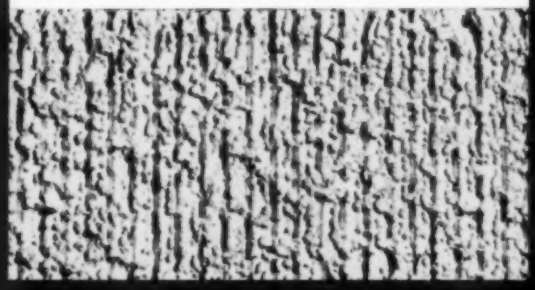
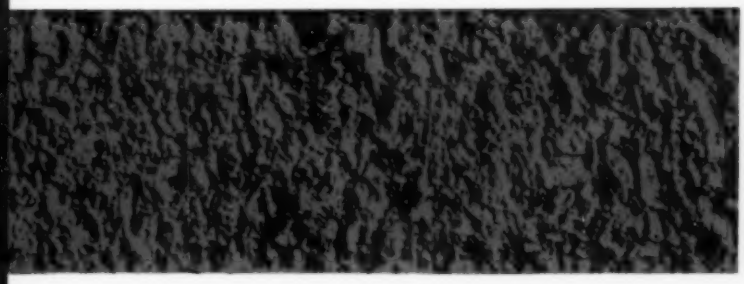
SINCE BRICKS HAVE GONE MODERN



are your sales keeping pace?



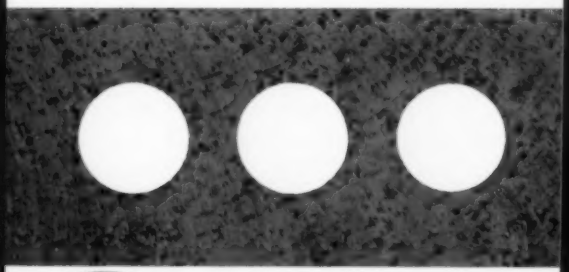
HOMMEL BRICK GLAZES ARE THE LOW COST WAY TO INCREASED SALES AND . . . PROFITS IN A GROWING MARKET.



If you make brick and want your share of a growing profitable market, Hommel can show you how to add inexpensive glazing facilities to your present line for limited or automatic volume production.

If you are producing colored brick . . . show us your procedure, clay type and firing ranges . . . and we will supply you with sand colors, engobe stains, glaze stains, glaze specks or prepared glazes . . . that are uniform and stable under your production procedures with assured weather and climate resistance.

CALL US. IT PAYS TO PLAN WITH HOMMEL



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THE O. HOMMEL CO.

PITTSBURGH 30, PA.

West Coast — 4747 E. 49th Street, Los Angeles, California

HOMMEL GLAZE STAINS with strength in deep color or hundreds of beautiful hues from let-downs, maintain their uniformity over the complete firing range. Your production department will like the workability. Hommel glazes and glaze stains have the climatic resistance that holds original brilliance for posterity.

HOMMEL ENGOBE STAINS produce eye-appealing matt-finish pastels that have captured the creative imagination of designers and architects. Our designer will consult with you to customize an architectural selection that will produce sales volume.

HOMMEL SAND COLORS were pioneered to produce attractive saleable colors for you that are ready to mix with your sand.

HOMMEL PREPARED GLAZES are developed and delivered to you ready to use with built-in uniformity. You select your color . . . and from that moment you can be assured that you will enjoy uninterrupted dependable production performance.

HOMMEL GLAZE SPECKS in a myriad of intense and pastel colors in a variety of screened sizes permit limitless custom design possibilities and patterns. We will help you develop a color speck line.

HOMMEL PRODUCTION LINE ENGINEERING ability has designed outstanding brick color production installations that are returning the highest incomes in the industry in relation to the capital investment involved.

The O. Hommel Company as pioneers in colored brick coatings and glazes can promise you a profitable association in assisting you in brick color techniques, in any process you use. We will welcome the opportunity to discuss brick color production with you.

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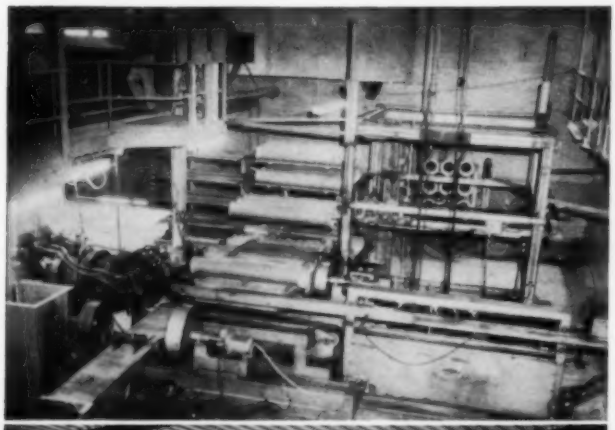
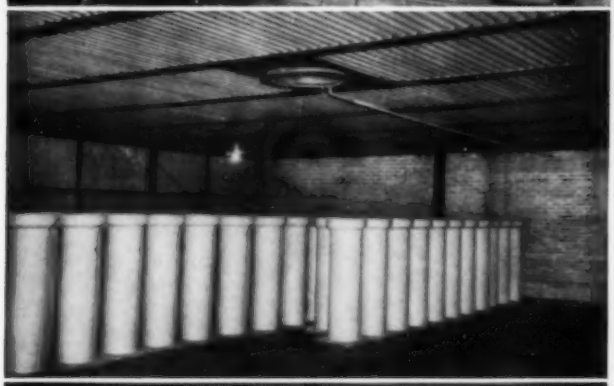
Time and cost shortcuts engineered

by HENDRYX



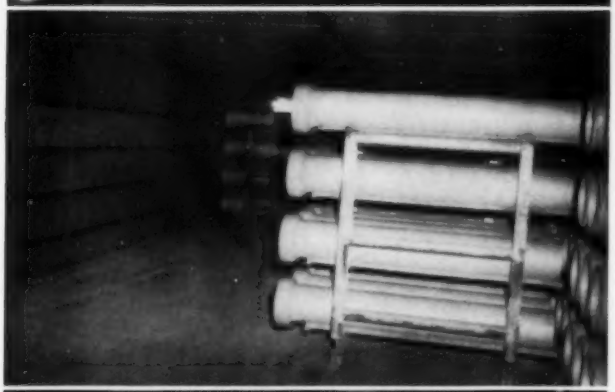
Pictured at the left is one of the manufacturing rooms of the Cannelton (Indiana) Sewer Pipe Company, designed by Hendryx. In sequence, beginning at the foreground are the auger machine and Pearne and Lacy equipment consisting of the former and off-bearer, the automatic finishing station and the automatic rack loader.

Hendryx designs for time, space and operating cost economy, at the same time stepping up production quality.

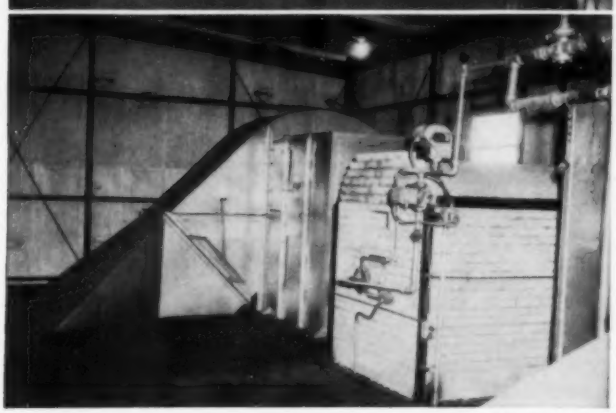


Ten inch sewer pipe is dried in 20 hours in this Hendryx-designed batch type dryer as compared to days or weeks in older style operations. Drying time for all pipe sizes may be anticipated at about one-sixth that of conventional practices.

For vertical drying the forced hot recirculated air flows from the steel grating floor to ports in the oven roof. The center circular vent bleeds off a controlled volume to maintain the desired humidity and permit replacement with fresh hot dry air.



Horizontal drying is faster due to freer air circulation. Four to 8" pipe sizes are dried in 14 hours. Combination rooms afford either horizontal or vertical drying. Ports in side walls are opened and roof and floor ports are closed. Horizontal drying requires racks and rack loading equipment as seen in top picture, and P&L automatic rack unloaders can afford further savings.



Each drying room is equipped with a gas-fired, heavy duty air-heater supplying two mixing chambers and two fans. Makeup air is constantly proportioned and introduced at the mixers to maintain adequate moisture pickup capacity.

Hendryx engineering for ceramic manufacture can provide you with a complete new plant or a single installation such as drying oven and handling equipment. Hendryx developments and design are proven cost and time savers. Your inquiry for ceramic plant or facility modernization is invited.

DWIGHT B. HENDRYX AND ASSOCIATES, INC.
6621 Darlington Road
PITTSBURGH 17, PA.

Eastern representative for Pearne and Lacy Machine Co., Inc

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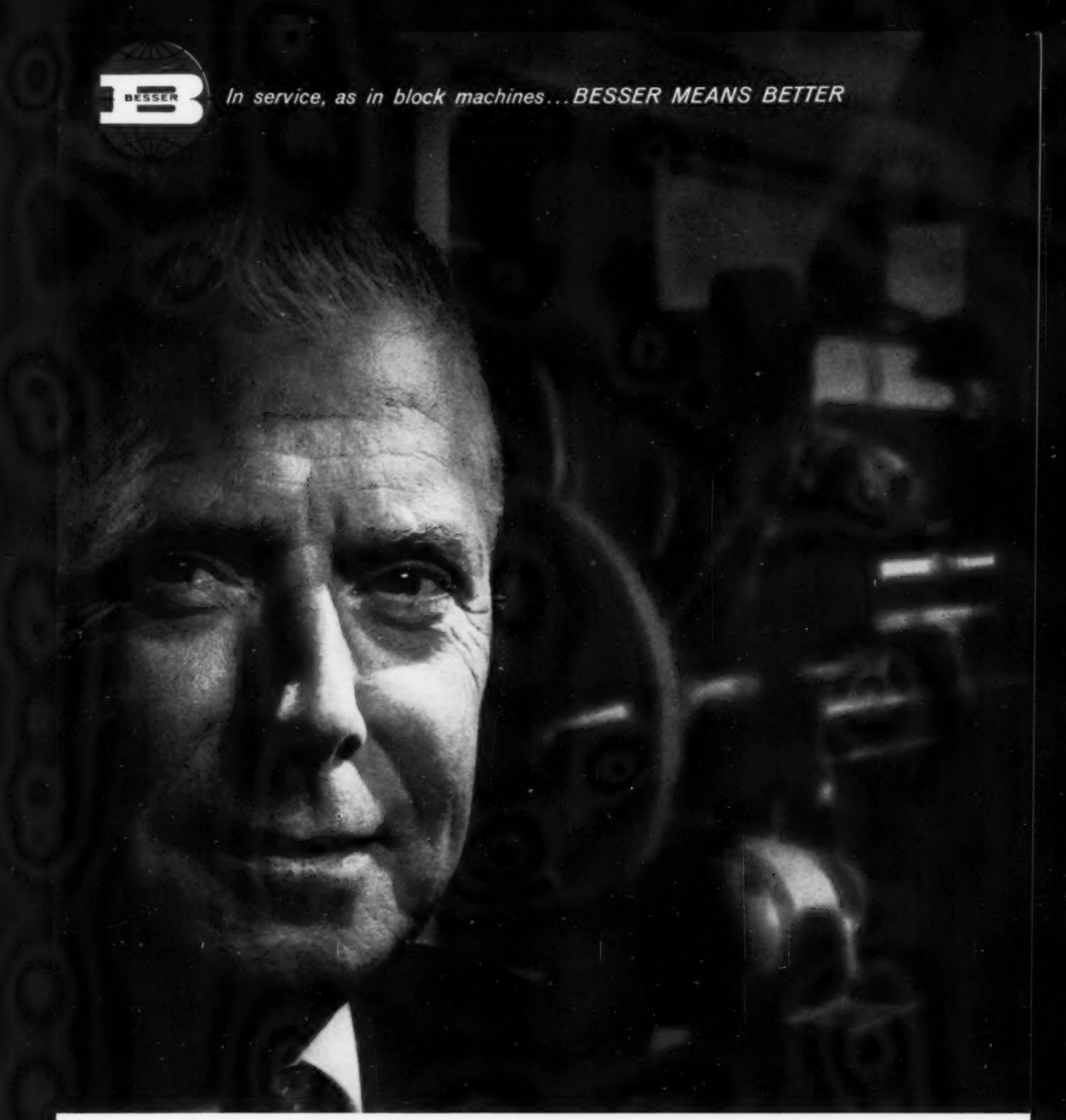
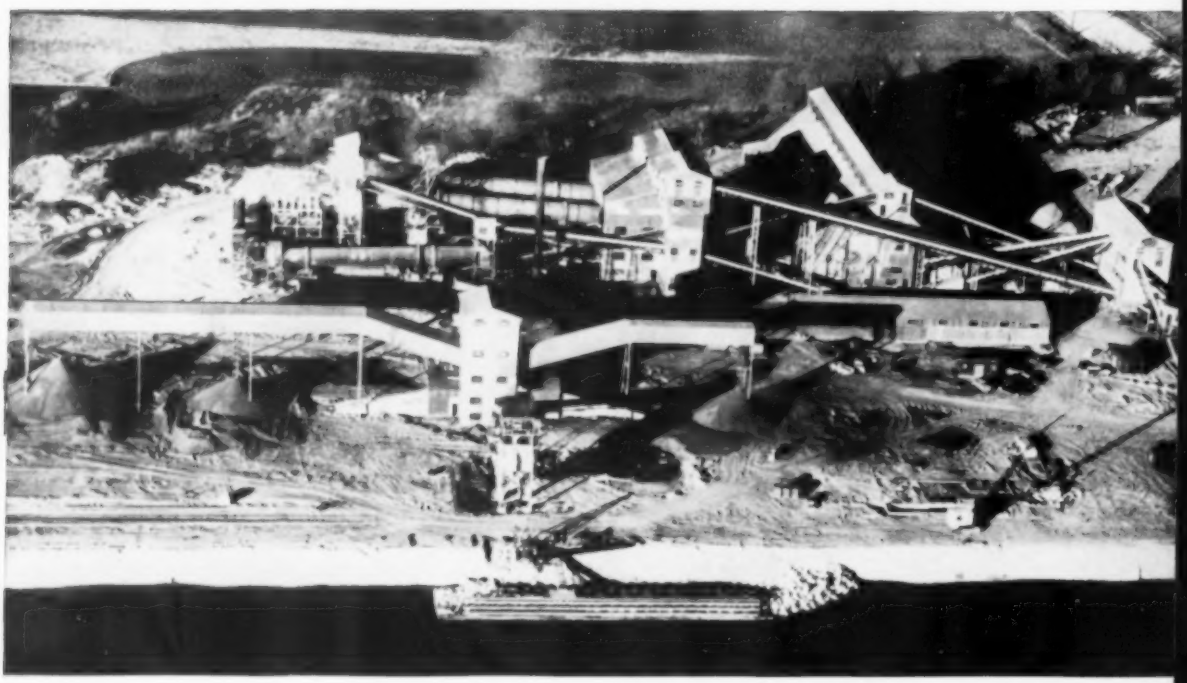


"A Vibrapac always operates like new! . . . After they've installed your Vibrapac, the Besser people look after it like a mother hen. One of their service men comes into our plant every thirty to forty-five days and gives the machine a real going over. That's what I call preventive maintenance! It saves money — actually makes money — for me. These Besser service men aren't just salesmen wearing another hat. They're factory-trained men who know the business-end of a wrench and how to use it. You can count on them to keep your Vibrapac running the way it was designed to operate." / Besser Company, Dept. 139, Alpena, Michigan, U. S. A.

A1-239

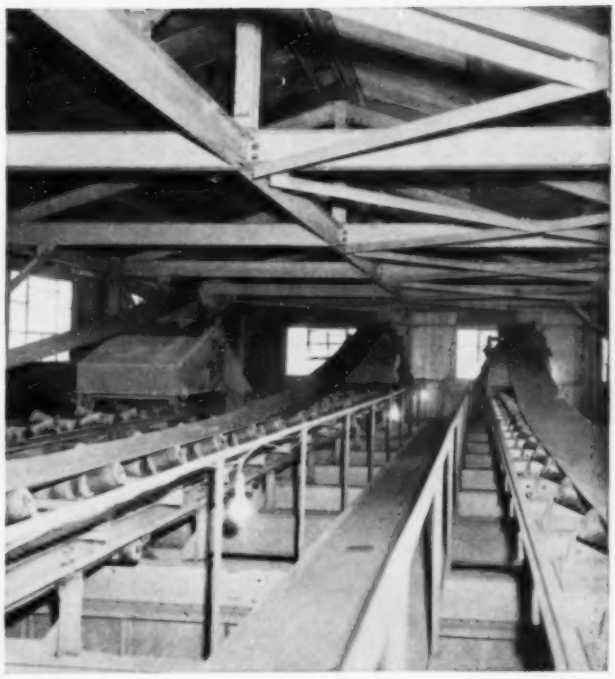


All sections of Material Service plant are shown here, including: foreground barge-loading and finished-product stockpiles; left dryer, kilns, and kiln firing buildings; right of center—raw shale storage, primary crushing and screening building.

MILE-LONG CONVEYOR SYSTEM USED IN NATION'S LARGEST EXPANDED-SHALE PLANT

Ground level plant view shows how mile-plus conveyor system is interlaced between buildings to provide a highly flexible materials handling operation.

View from primary crushing and screening building shows seven of 35 Barber-Greene conveyors in plant. Three units at left convey material to kiln feed bins in firing building. Two center units are in primary crushing-screening circuit. Conveyors on right move shale from raw screens to raw shale storage building.



Three Barber-Greene tripper conveyors that discharge shale and coal into appropriate kiln feed bins are shown atop kiln firing building.

35-unit Barber-Greene belt conveyor installation mechanizes highly efficient lightweight aggregate plant

The Ottawa, Ill., plant of Material Service, a division of General Dynamics Corporation, produces 1,500 cu. yds. of Materialite, an expanded-shale aggregate, daily. One of the most advanced plants of its kind in existence, it utilizes 35 Barber-Greene Conveyors, totalling 6,375′ in length, to move materials from truck-dump through a variety of processing phases, to finished-product stockpiles, from which it is loaded into railroad cars, trucks, or barges.

The result of nearly five years of investigation and research, the plant is the largest of its kind in the nation. And efficient plant production since the opening late in 1957 has more than justified the painstaking preliminary study by this aggregate producer.

The conveyor system – one of 34 Barber-Greene systems operating in Material Service plants around the nation – gives unusual flexibility of operation through three screening and three reduction phases, plus a wide blending range in kiln feed. Conveyors vary from 24″ to 36″ in width, and include a total of 1,473 heavy-duty idlers. The system has given trouble-free performance since plant operations began. Ability to stand up under the most severe abrasive and dusty conditions encountered in applications such as this have made Barber-Greene Conveyors the No. 1 choice of all types of aggregate plant operators.

Your belt conveyor equipment headquarters

Representatives in Principal Cities of the World

Barber-Greene BG

Main Office and Plant AURORA, ILLINOIS, U. S. A.
Other Plants: DeKalb, Milwaukee, Detroit, Canada, England, Brazil, Australia

CONVEYORS • LOADERS • DITCHERS
ASPHALT PAVING EQUIPMENT

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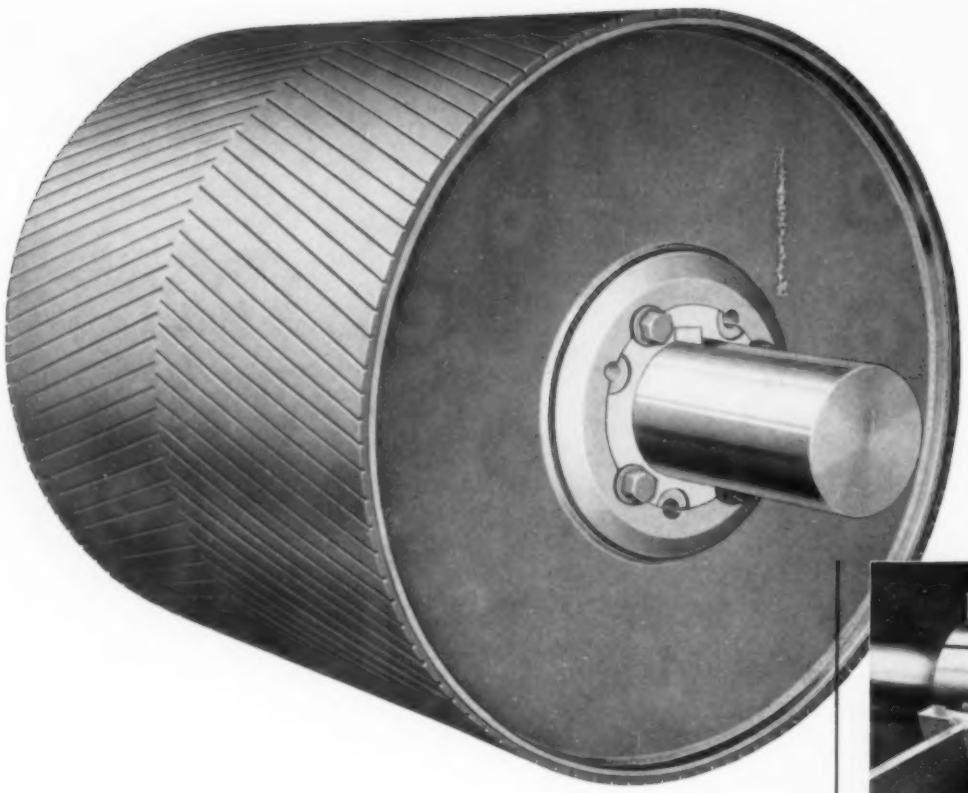

AMERICA'S NO. 1 STEEL CONVEYOR PULLEY!

There are more Taper-Lock Steel Conveyor Pulleys than any other operating on big jobs. Why? Simply because of the dependable performance they deliver under the toughest conditions.

The rims, discs and hubs are *steel* — and they are fused together into jointless drum construction for (1) maximum strength with minimum weight, (2) exclusion of dirt, water and steam, (3) terrific shock resistance. Every weld is made by the submerged arc process giving deep penetration and exceptional strength. Rims are accurately die formed in the smaller diameters and rolled in the larger diameters. Pulleys with 26″ and wider faces have interior discs that add to the trueness, rigidity and strength of the rims.

Dodge offers the world's biggest range of stock sizes. Diameters from 6 inches to 8 feet — all face widths, crowned or flat. Standard or special rubber lagging available. Ask your local Dodge Distributor — or write us for a technical bulletin.

Dodge Manufacturing Corporation, 4900 Union Street, Mishawaka, Indiana

The Products with the Pluses... **DODGE** *of Mishawaka, Ind.*

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Look under "Dodge Transmissioneer" in the white pages of your phone book. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods.

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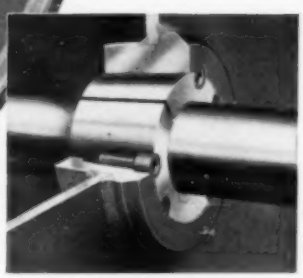
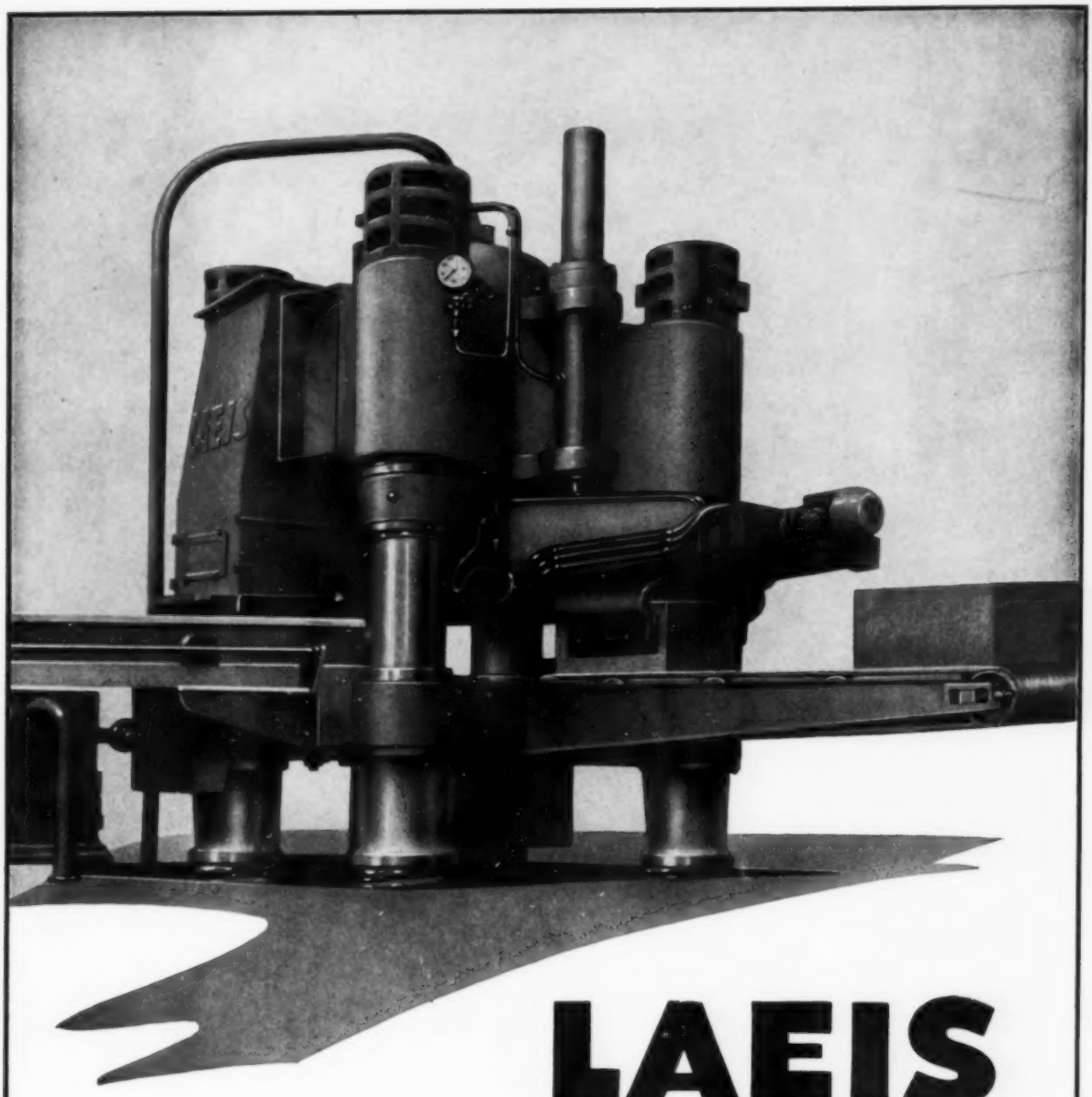


No "walking" on the shaft with Taper-Lock. Full length contact of hub. Holds under heavy loads and shock. Easy on — easy off.

Patented Back-up Bars give full rim strength through 100% weld penetration. Diametrically opposed bars insure balance.

Jointless construction creates a drum fully sealed against conveyed materials of all kinds as well as dirt, water and steam.



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COMPLETELY AUTOMATIC PRESSES "ROBOT"

Hydraulic, fully automatic presses for forming special as well as standard refractory shapes, crucibles, ceramic bonded grinding wheels and large porcelain parts. Suitable for any large shape which requires uniform dense compaction.

Pressures up to 2,000 tons total can be developed. Fully covered by German and foreign patents. These presses are being used most advantageously in the refractory industry for basic refractories, silica refractories, arches, checkers, hollow refractory tiles and blocks.

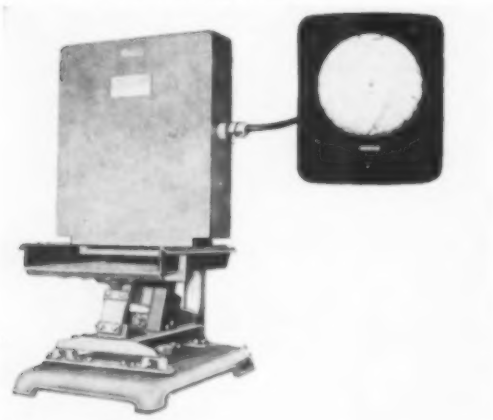
For complete information and literature write to

LAEIS-WERKE A.-G.-TRIER
Western Germany

Circle Service No. 31

MATERIALS & EQUIPMENT IN THE NEWS

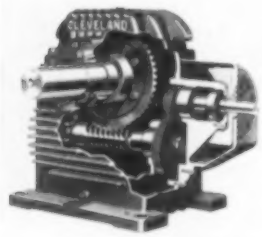
Moisture Control System



This company's moisture control system installed on a process stream will measure and record, continuously and instantaneously, the moisture content of any free-flowing granular material. Installations on a variety of products such as clay are giving correlations with laboratory measurements as close as ±0.15%. *Engineering Management, Inc.*

Circle Service No. 100

Speed Reducers



Fan-cooled helical worm gear speed reducers are available in ratios extending approximately from 34:1 to 39:1. The reducers come in seven sizes, ranging from 4-inch to 12-inch center distances. Ratings are fractional to 58.5 H. P. *Eaton Mfg. Co.*

Circle Service No. 101

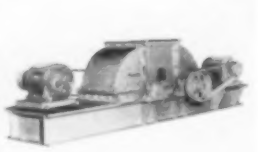
Car Bottom Kilns

Improved car bottom shuttle kilns in either the single or double door model are available from this firm. The firm also provides complete engineering service for the design and construction of plants and modernization of existing facilities within the industry.

It is claimed that firing temperatures up to Cone 35 and even heat distribution is possible at every stage of the firing, with all types of setting. *Swindell-Dressler Corp.*

Circle Service No. 102

Crusher



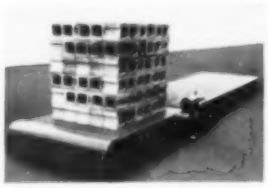
The new Twin-Rotor Impactor offered by this firm has been designed to eliminate the problems of plugging and caking normally associated with fine reduction of wet sticky materials.

This new crusher is offered in two sizes for rated capacities to 100TPH when used as a secondary crusher in closed circuit to produce 100% minus 8 mesh product. *Pennsylvania Crusher Div.*

Circle Service No. 103

Cubeveyor

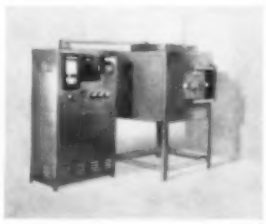
This company has developed a useful piece of equipment for plant operators. The company's "Cubeveyor" enables the cuber to continue forming cubes at a normal rate without slowing down to wait for the lift truck to pick up finished cubes. The



cubes are formed directly on the power end of the conveyor and as soon as the cube is completed the operator triggers a switch which automatically moves the cube off the conveyor and onto rollers. *Columbia Machine*

Circle Service No. 104

Furnaces



A new complete line of furnaces incorporating Kanthal-super heating elements made from molybdenum disilicate has been introduced by this company. These furnaces are uniquely suited to two types of operating conditions: (1) firing in oxidizing or nitrogen atmospheres in the temperature range from 2600°F. to 3000°F. and (2) firing in atmospheres containing CO or H_2 up to 2730°F. *Harrop Precision Furnace Co.*

Circle Service No. 105

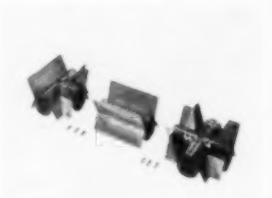
Pivoting Pyrometer

An easily-installed pyrometer system that continuously scans and records the temperatures on the shell of a rotary kiln has been developed by this firm. The equipment automatically signals an alarm before any potential hot-spot reaches the dangerous stage. *Leeds & Northrup Co.*

Circle Service No. 106

Burners

These new air-stream burners are designed for air-heating application, oven heating systems, etc. Used in conjunction with variable ratio-type mixers, a turndown range of 25:1 is easily attainable with air make-up heating systems.



Recommended maximum air velocities are 3000 ft/min in air make-up systems and 3500 ft/min in oven heaters. Capacities available to 400,000 Btu/hr per 12" burner section. *Eclipse Fuel Engineering Co.*

Circle Service No. 107

New Line

The Allis-Chalmers Mfg. Co. has announced a complete line of new and revised equipment models.

A new 105 hp 145-T motor grader was introduced.

The company has extended its line of tractor loaders to six models with the introduction of the new TL-30.

It has also redesigned and restyled the TS-160 motor scraper, to increase the unit's capacity to eight and one half struck and 11 cubic yards heaped and the payload to 13 tons.

(*Continued on page* 30)

HARROP put the heat on the clay from Malay...

You might say this four cubic inches of clay was given "the third degree" — except that we actually gave it 1900 degrees, Fahrenheit, in one of our test kilns.

And..."it talked"...told us plenty!

We learned its drying and firing shrinkage, color variation and its porosity . . . and much other "inside information" that enabled us to intelligently recommend proper dryer and kiln installation for the company in Singapore, Malay Straits.

That's just a fraction of the degree we go to at Harrop to give our customers the equipment they can profit by. No matter where in the world you are, we'd be pleased to give non-obligating consultation to your problem.

HARROP

Harrop Ceramic Service Co.

35 EAST GAY STREET **COLUMBUS 15, OHIO**

Western Representative: Fred J. Ford, Room 413, 35 E. Gay St., Columbus 15, Ohio.

Southwestern Representative: Process Engineering Service, 6936 San Pedro Ave., San Antonio, Texas.

Harrop Precision Furnace Co. (division of Harrop Ceramic Service Co.), 3470 East Fifth Avenue, Columbus 19, Ohio . . . laboratory, industrial and school furnaces.

Practical ceramic engineering put profitably to work in

TUNNEL KILNS • DRYERS • PLANT DESIGN

Circle Service No. 32

A new power train development HD-21 Crawler tractor was introduced.

At the same time a new training center for dealer's service personnel was announced. *Allis-Chalmers Mfg. Co.*

Circle Service No. 108

Pressure-Vacuum Control

This firm is now offering a sensitive calibrated pressure-vacuum control for use on a wide variety of applications such as process control equipment. The unit is designed without and enclosure for direct incorporation into the equipment.

Several adjustable ranges are available within limits of 30" Hg vac and 500 psi, with on-off differentials from 1.5 $\pm$½ Hg to 10 +3 psi. *United Electric Controls Co.*

Circle Service No. 109

Vibrating Screen

A new vibrating screen, which incorporates two shafts to provide screen pulsations, has been announced by this company.

Called the Ko-Cal "Twin-Shaft," the screen is available in three sizes: 4' x 8', 4½' x 10', and 5' x 14'. *Koehring Calf Co.*

Circle Service No. 110

Automatic Scale

A new, high speed automatic gross weighing system for bagging sticky materials has been developed by this firm.

The unit will automatically proportion material from a bulk bin and fill 25, 50, and 100 lbs with preset amounts. *Thayer Scale Co.*

Circle Service No. 111

Packaged Unloader

This model T-SP is a new motorized package unloader for brick and other building materials. The self-contained, factory-tested unit comes fully wired with controls in place. *Side-O-Matic Unloader Corp.*

Circle Service No. 112

Belt Tripper

The entire unit weighs 762 lbs, is completely reversible, and spots the conveyed commodity at any point in your material handling system. *Finco, Inc.*

Circle Service No. 113

"Methods for Removing Iron Pyrites and Carbonates"—a guide for building better products. Write for your free copy today. Learn all the details of *Overstrom Beneficiation Systems*—including how you can arrange for a lab test and report at no obligation.

OVERSTROM & SONS, INC • DALLAS and ALHAMBRA

Forward requests to 1031 South Haskell, Dallas 23, Texas

Circle Service No. 33

NEW LITERATURE

Weighing Feeder—This firm's belt gravimetric feeder is described with illustrations, dimensional drawings, installation diagrams and descriptions of operations in this new bulletin issued by the firm. *B-I-F Industries.*

Circle Service No. 114

Hardsurfacing—Well illustrated catalog on product features, ordering information and prices on this firm's complete line of hardsurfacing and manganese steel buildup material. *American Manganese Steel Div.*

Circle Service No. 115

Combustion Controls—Bulletin 3-001 describes the company's complete line for furnaces, ovens, and boilers. *North American Mfg. Co.*

Circle Service No. 116

Pulling System—Illustrates the company's pulling system and application of hydraulic power to pulling problems. No. PS-1. *Owatonna Tool Co.*

Circle Service No. 117

Motor Couplings—Six page folder 2975 describes the company's line of motor couplings including the three new features added to the line. *Link Belt Co.*

Circle Service No. 118

Silicones—Catalog CDS-129C describing the company's line of silicones and their uses is now available. *General Electric.*

Circle Service No. 119

Masonry Saws—Specifications and prices given in this firm's new catalog. *Everready Brik-Saw Co.*

Circle Service No. 120

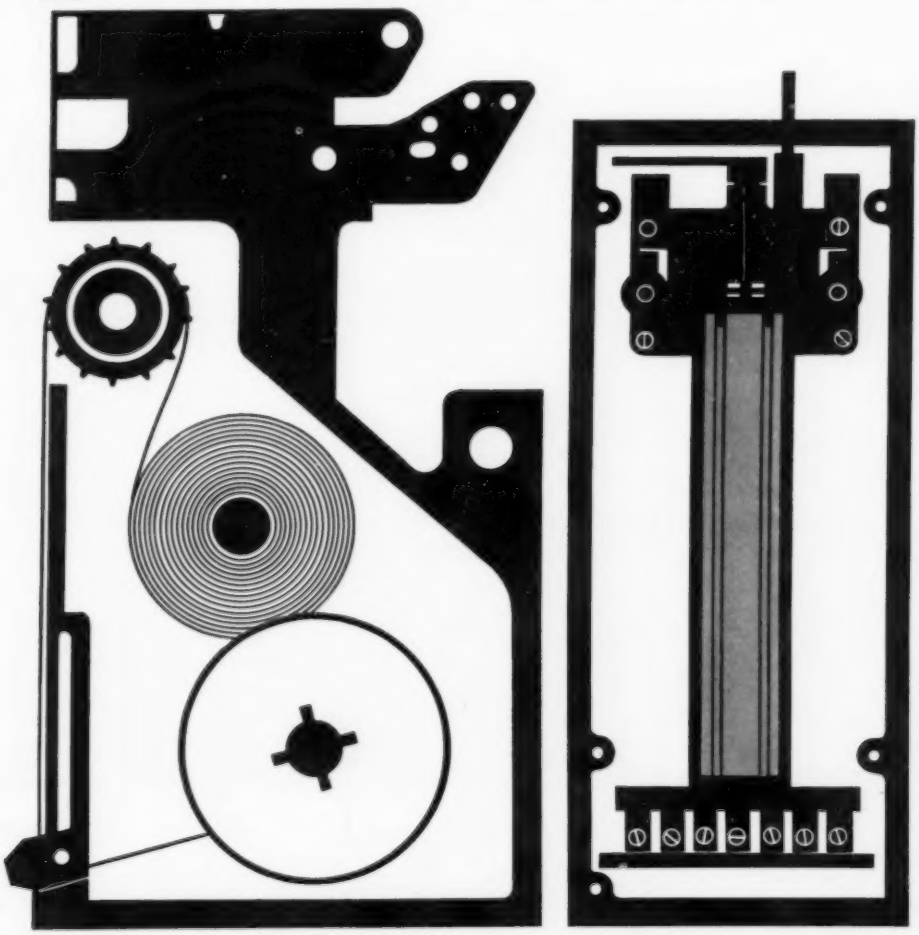
ALL-NEW *ElectroniK 17* POTENTIOMETERS HAVE NO SLIDEWIRE, NO SLIDEWIRE PROBLEMS

Here is a totally new kind of potentiometer with a totally new kind of measuring system. The *STRANDUCER* replaces the slidewire, and sets a new high standard for potentiometer performance. The new *ElectroniK 17* potentiometers have calibrated accuracy of ±0.25%.

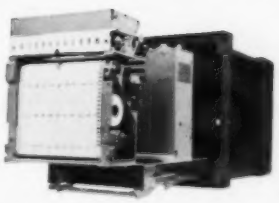
In addition, modular construction makes *ElectroniK 17* instruments easiest of all potentiometers to operate, convert and maintain. Full interchangeability of components cuts service time and spare parts requirements.

You can get *ElectroniK 17* instruments as strip or circular chart recorders or circular scale indicators. You can get electric contact control with up to 8 contacts. All control units are of convenient plug-in type. For all the eye-opening facts about this new class of instruments, call your nearby Honeywell field engineer, or write MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Phila. 44, Pa.—In Canada, Honeywell Controls, Ltd., Toronto 17, Ont.

The unique *STRANDUCER* rebalancing element works on the proven strain gage principle. Both *STRANDUCER* and pen carriage are linked to the potentiometer balancing motor. A change in electrical input causes the balancing motor to change the tension—and electrical resistance—of the *STRANDUCER*, to reposition the instrument pen or pointer. The *STRANDUCER* is unaffected by corrosive atmospheres and has no contactors. It has unusually long life and infinite resolution and is unaffected when the instrument operates in ambient temperatures up to 130° F.



True modular construction saves you time, trouble, money. Three basic modules—case, display and drive—make up the *ElectroniK 17*. The case fits standard 19-inch relay racks. You can remove the door easily and without tools when converting from strip chart to circular chart or circular scale operation. You can pull out the chassis to the service position without tools, and without interrupting operation, or remove it completely. Up to 8 contact control modules can be plugged in for a variety of control possibilities.



Honeywell

First in Control

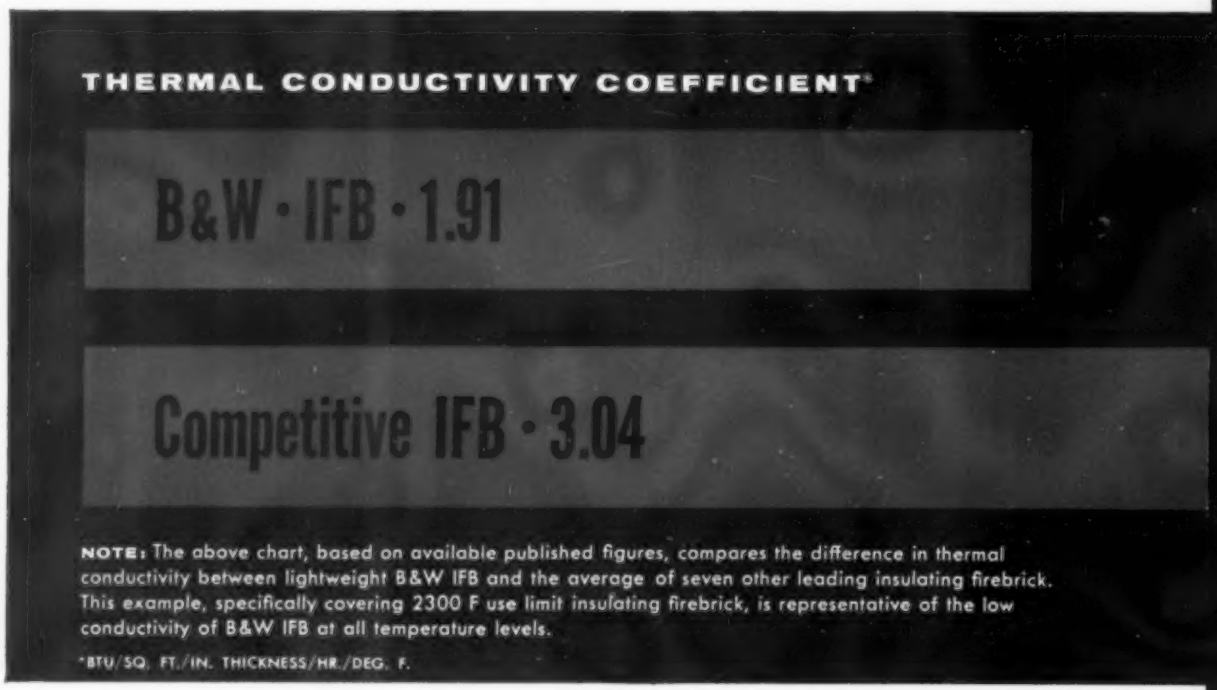
SINCE 1906

HONEYWELL INTERNATIONAL Sales and Service offices in all principal cities of the world.
Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

Circle Service No. 34

Another *plus* of Lightweight B&W Insulating Firebrick

LOWER THERMAL CONDUCTIVITY means



NOTE: The above chart, based on available published figures, compares the difference in thermal conductivity between lightweight B&W IFB and the average of seven other leading insulating firebrick. This example, specifically covering 2300 F use limit insulating firebrick, is representative of the low conductivity of B&W IFB at all temperature levels.

*BTU/SQ. FT./IN. THICKNESS/HR./DEG. F.

All insulating firebrick are not the same. Published figures show wide variations in *all* of the important properties among the leading brands of IFB.

Take thermal conductivity. This important property affects fuel costs, temperature control and the speed with which a furnace heats and cools. Thermal conductivities range from a B&W low of 1.91 to a high of 3.47 for a competitive IFB—*almost a 100% difference in wasted heat and fuel costs.*

You are paying for insulating firebrick . . . make sure you get *all* the benefits. B&W—the originator of IFB—manufactures a full line of IFB with an experience-proved balance of light weight, high insulating value, high strength and long life.

For complete information on B&W Insulating Firebrick, write for Catalog R-38 to The Babcock & Wilcox Company, Refractories Division, 161 East 42nd Street, New York 17, N. Y.

LOWER FUEL COSTS

the payoff

• 17% reduction in fuel cost • 13% increased output

Cost and operating figures, based on carefully weighed tests, have conclusively proved the superiority of B&W Insulating Firebrick to Wadsworth Brick and Tile Company, Wadsworth, Ohio. This B&W Insulating Firebrick lined kiln is providing 17% lower fuel costs and 13% increased output. This is just one of many proofs in our files that "there is an important difference in insulating firebrick."

R-661

B&W

THE BABCOCK & WILCOX COMPANY

REFRACTORIES DIVISION

Circle Service No. 35

KENNEDY PRODUCTS
FOR THE CERAMIC INDUSTRY

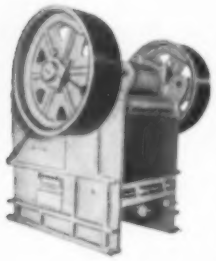
KENNEDY GRANULAR MATERIALS PREPARATION SYSTEM

From the initial raw material to the final blend of ingredients, the KENNEDY system provides the careful preparation, handling and accurate proportioning so necessary to quality ceramic products.

What are some of the advantages of the KENNEDY Designed System?

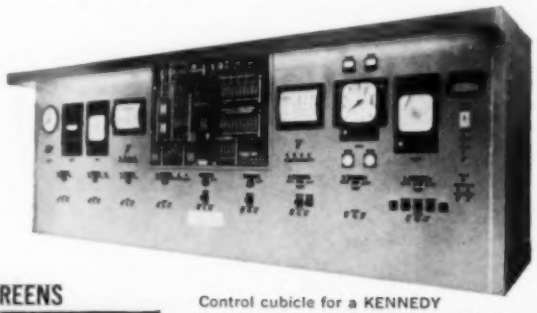
- Single responsibility for the performance of the entire system.
- Maximum utilization of raw material.
- Production of mixes to optimum maximum density within ±1%.
- Highest reproducibility.
- Complete automation; entire operation easily supervised at one station.
- Higher efficiencies, lower labor costs.

A KENNEDY Granular Materials Preparation System can be designed and built for any raw materials which require reduction, fractionation and blending.



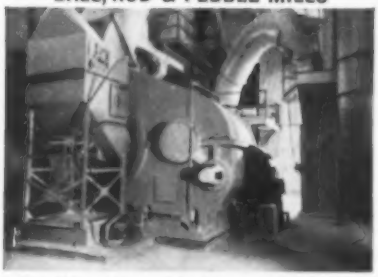
KENNEDY CRUSHERS

KENNEDY Roll Crushers produce high quantities of product within narrow size ranges. KENNEDY Jaw & Gyratory crushers are important for primary and secondary preparation.



Control cubicle for a KENNEDY Granular Materials Preparation System

KENNEDY BALL, ROD & PEBBLE MILLS



The KENNEDY Air Swept Mill provides unusual control over production of fine grinds. The Pebble Mill eliminates metal contamination in grinds down to 25 microns.

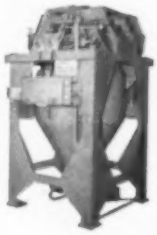
KENNEDY ROTARY KILNS

KENNEDY Kilns, Coolers, Firing Hoods and other accessories are important components of many ceramic materials preparation operations.

KENNEDY SCREENS

KENNEDY open or closed multideck screens provide the close separation of size fractions required for the most effective use of the available raw materials.

KENNEDY PNEUMATIC CONVEYING SYSTEMS



These systems handle powdered or granular materials without motors, feed screws or other major moving parts. They are simple, flexible and economical.

KENNEDY AIR-FLOAT CONVEYOR

The smooth, durable, porous tile conveying surface of the KENNEDY Air-Float Air-gravity conveyor assures low-cost, maintenance-free conveying of granular solids.

• • •

KENNEDY's reputation for sound design, high performance and quality equipment is recognized in many industries all over the world. We invite your request for further information.

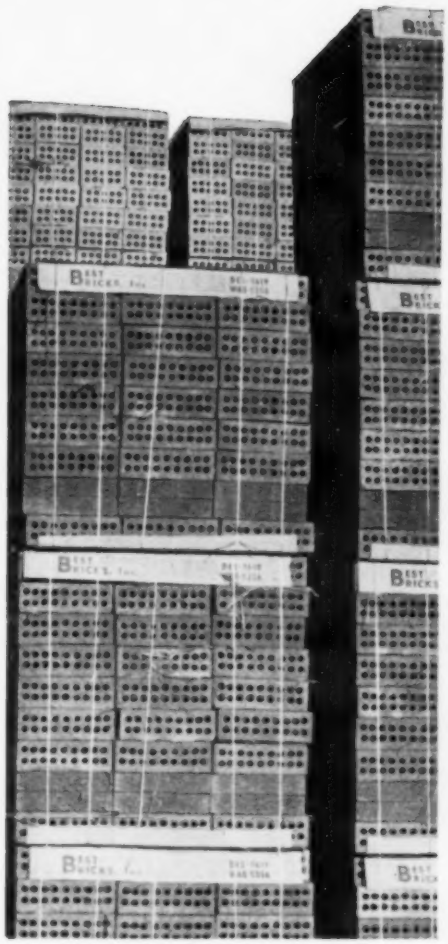
KENNEDY VAN SAUN

MANUFACTURING & ENGINEERING CORPORATION

405 PARK AVENUE, NEW YORK 22, N.Y. • FACTORY: DANVILLE, PA.

Primary & Secondary Gyratory Crushers • Jaw Crushers • Roll Crushers • Impact Breakers • Hammer Mills • Rod & Ball Mills • Kilns • Kiln Accessories • Dryers • Scrubbers • Screens • Pneumatic & Mechanical Conveyors • Complete Crushing, Lime, Cement & Carbon Paste Plants
KENNEDY Testing & Research Service

Circle Service No. 36



LOWER COST PACKAGING

with the GRIPLOCK

Brick Packaging System

The Griplock self-unitizing brick packaging system utilizes the new "Brick Pak" specification round wire strap—the guaranteed *non-stretch* strap with superior toughness and strength.

"Brick Pak" hot dip galvanized wire *will not rust*. It allows safe handling and shipping even after months of storage under adverse weather and ground conditions.

"Brick Pak" round wire strapping, the heart of the Griplock packaging system, is economical. The completed unit cost averages 10% to 20% less than the flat band components of a comparable package.

GRIPLOCK

GRIPLOCK DIVISION
C. Tennant, Sons & Co., of New York
100 Park Avenue, New York 17, N. Y.

Mobile Griplock Unitizing Jig. Designed for rapid brick packaging with "Brick Pak" wire strapping. Griplock engineers will demonstrate its simple use to your personnel.

FREE DEMONSTRATION AT YOUR PLANT

Griplock engineers will demonstrate the economical Griplock system at your plant site, utilizing standard packaging arrangements or special variations to meet your exact needs for transport by rail or truck. Write or phone: Griplock Division, C. Tennant, Sons & Co., of New York, 100 Park Avenue, New York 17, New York.

Loading Griplock 4-pier truck cubes for delivery to job site 100 miles from plant.

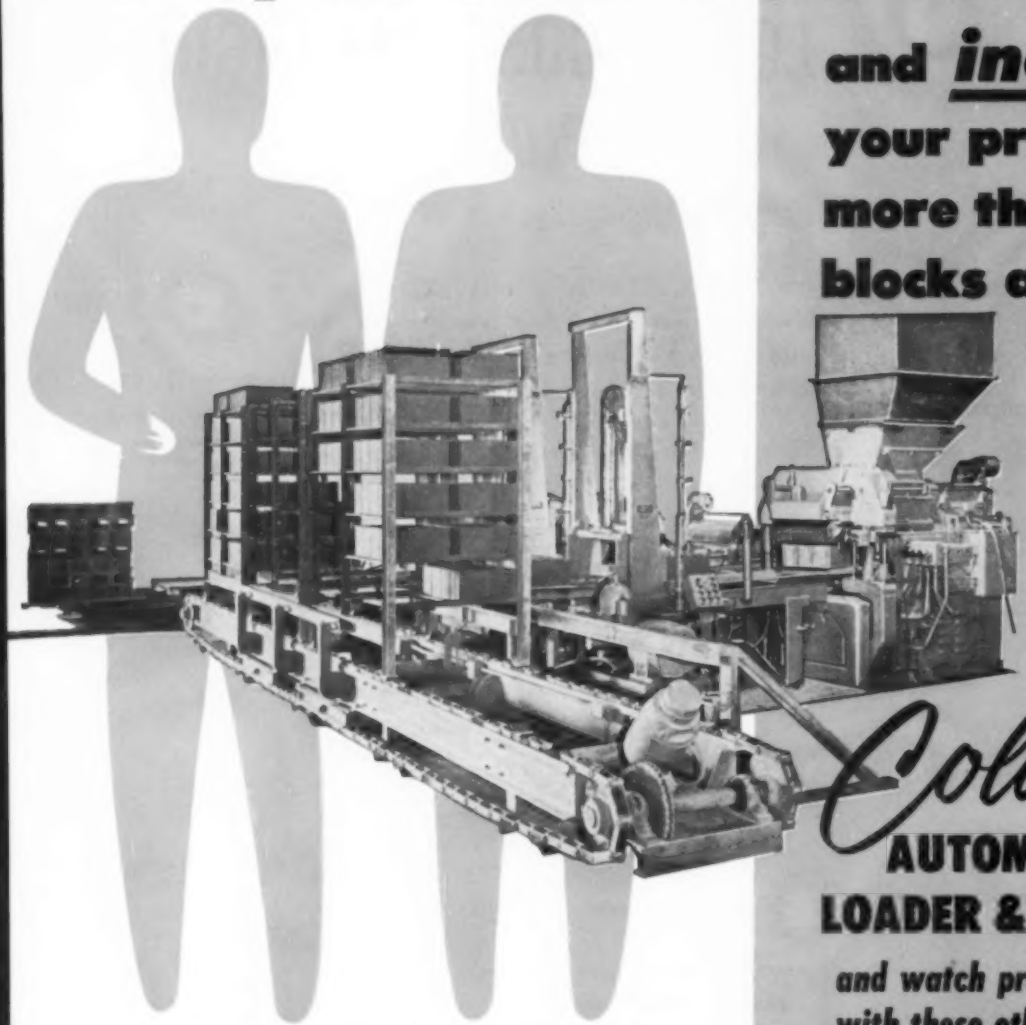
Building a typical Griplock cube, showing fork opening construction.

Two 5-pier, 500 brick, Griplock packages for rail shipment.

Circle Service No. 37

cut your crew to TWO*

and *increase* your production more than 1,000 blocks a day...



with a Columbia AUTOMATIC RACK LOADER & UNLOADER

and watch profits rise with these other advantages

- ✓ Will offbear the full speed of machine.
- ✓ Eliminates culls and corner damage.
- ✓ Better looking, more salable product.
- ✓ Cuts rack mileage in half.
- ✓ Allows hiring of better class workmen.
- ✓ Cuts cubing labor turnover to a minimum.
- ✓ Cuts employee fatigue and training time.
- ✓ Gives plant owner complete production control.
- ✓ Easy pay-as-you-depreciate terms can be arranged to suit your particular case.

*With Columbia's Automatic Rack Loader and Unloader and automatically controlled batching and mixing, the production units of your plant can be operated by just two skilled men—the lift truck operator and the cuber.

For complete information call your Columbia representative or write, wire or phone.

Columbia MACHINE

Home Office: 107 Grand Blvd., Vancouver, Washington
Branches: Mattoon, Ill.; Burbank, Cal.; Orlando, Fla.

Manufacturers and world-wide distributors of a complete line of plant equipment for production of concrete products

GROWING

...to Serve You Better

Yes, we have been growing.

The Varco Manufacturing Plant, shown above, has recently been expanded for the fourth time since its original construction only three years ago.

Your patronage and confidence have been leading factors in making our growth possible. So, we extend a sincere hand of "thanks" to the Brick and Clay industry.

Our enlarged facilities will allow us to give you still better buildings and better service.

Whatever your building needs . . . clay storage, kiln building, brick shelter, complete plant . . . investigate Varco. There's a good reason why the Brick and Clay industry is erecting more Varco Buildings than any other type: Varco is the better building for less.

Varco

R. G. Varner Steel Products, Inc.

P. O. Box 781 *JE 4-6030* *Pine Bluff, Arkansas*

Circle Service No. 39

←Circle Service No. 38

Refractory concrete tops keep cars rolling longer

Refractory concrete car tops cast in place or precast with LUMNITE calcium-aluminate cement and aggregate will resist the soaking heat in ceramic kilns. Spalling and cracking are held to a minimum. And the low volume change of refractory concrete means tops stay level, minimizing wrecks.

Plants find that installation is easy and economical, too, since no skilled labor is required to place refractory concrete. After placing, concrete reaches service strength in 24 hours. For extra convenience, castables containing LUMNITE cement are available from leading manufacturers of refractories. These packaged mixtures are ready to use. Simply add water, mix and place.

For more information, write Universal Atlas Cement, 100 Park Avenue, New York 17, N. Y.

OFFICES: ALBANY • BIRMINGHAM • BOSTON • CHICAGO • DAYTON • KANSAS CITY • MILWAUKEE • MINNEAPOLIS • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • WACO

Universal Atlas Cement
Division of
United States Steel

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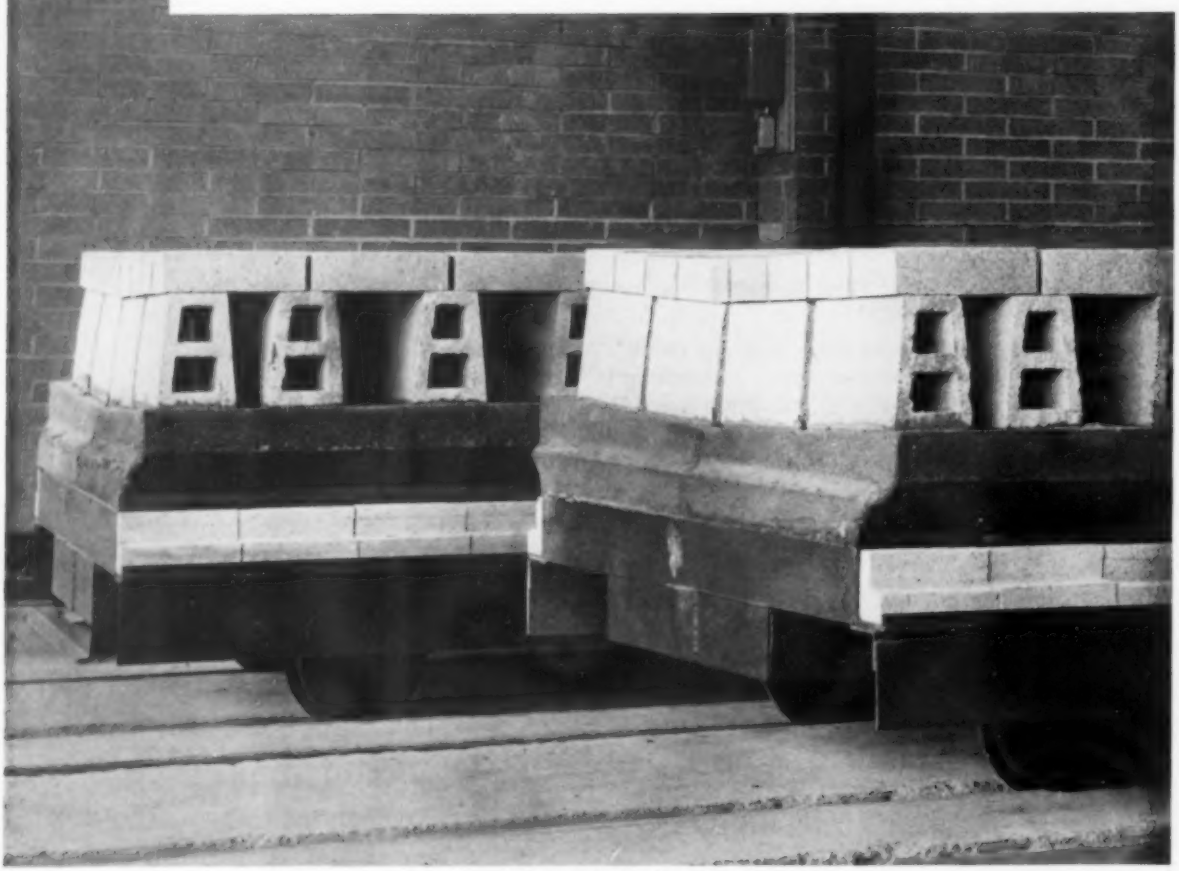


Circle Service No. 40

HYSTER

Now! monotrol on Pneumatics—

Only HYSTER® has it!

EXCLUSIVE MONOTROL CONTROL SYSTEM—Performance proved on Hyster cushion tire trucks—now available on pneumatics — 3,000, 4,000, 5,000 lbs. capacity.

SAFE, FAST HANDLING—Driver's right foot controls acceleration—forward-reverse. Left foot controls *braking*—truck *inching*. Hands free for full-time steering and load control.

EASIEST TRUCKS TO DRIVE—Monotrol with Hystamatic transmission means more production per manhour—reduced driver fatigue.

CALL your Hyster dealer for a demonstration.

INDUSTRIAL TRUCK DIVISION—Lift trucks, mobile cranes, straddle carriers
TRACTOR EQUIPMENT DIVISION—Construction and logging equipment
MARTIN TRAILER DIVISION—Heavy machinery hauling trailers
INTERNATIONAL DIVISION—Overseas manufacturing, sales and service

Manufactured in: Portland, Oregon (Home Office) • Danville, Ill. • Peoria, Ill. • Kewanee, Ill. Australia • Brazil • England • France • The Netherlands • Scotland • Union of South Africa

HYSTER COMPANY
INDUSTRIAL TRUCK DIVISION
P. O. Box 847 Danville, Illinois

Circle Service No. 41

New UNIT 1-YD. MACHINE

FAST, POWERFUL, BUILT-TO-LAST *for lowest cost yardage*

Here is the **new** MODEL 271-C, Unit's answer to your need for a 1-yd. machine that will do a better job of moving dirt, **yet be economical to own and maintain.** This new addition to the UNIT line retains many of the time-proved features that have won other UNITS world-wide fame for complete reliability and top performance. Add to these dependable features new advances exclusive to the UNIT 271-C, and you'll see why this machine can make more money for you.

The UNIT 271-C features a **new** compact swing circle gear assembly with upper works mounted on a large diameter, double live ring of steel balls running in hardened races. On the job, this means a friction-free, fast swing. With center pin mounting, hook and turntable rollers, and roller path eliminated, there's little lubrication required . . . practically no day-to-day maintenance.

The **new** 271-C also features a unique system that keeps hard working swingers extra cool, extending their life. Swingers run in a bath of oil which is kept cool by a set of copper coils connected directly to the radiator cooling system. Thermostatic control holds temperature below the point where clutch lining life is normally affected by heat.

There is a lot more to tell about these and other UNIT advantages on this, the newest entry into the 1-yd. field. Let your local Unit distributor give you the complete 271-C story.

UNIT

UNIT CRANE & SHOVEL CORP.
6649 W. Burnham Street
Milwaukee 19, Wisconsin

The Model 271-C

FEATURING

DOUBLE BALL BEARING SWING CIRCLE

Friction-free swing, higher load capacity, sharply reduced maintenance time.

OIL-COOLED SWING CLUTCHES

Here's the ultimate in dissipation of harmful heat!

EXCLUSIVE ONE-PIECE MAIN MACHINERY CASE

All gears, shafts, and bearings completely enclosed in a constant oil bath.

EXCLUSIVE AUTOMATIC TRACTION BRAKES

Trigger-fast braking provided in either direction of travel **without manual control.**

STRAIGHT-IN-LINE ENGINE MOUNTING

Longer life, better performance, and increased efficiency because all working parts are perfectly aligned . . . power flows directly to main machinery.

NEW FULL VISION CAB

Operator can see in ALL directions at all times. Promotes safety, increases efficiency.

DISC-TYPE CLUTCHES

Provide uniform pressure without grabbing or chattering . . . easily adjusted.

WORM-DRIVEN POWER TAKE-OFF

Provides "one step" speed reduction between power unit and transmission shaft . . . eliminates many wearing parts . . . minimizes friction losses.

FULL CONVERTIBILITY

Shovel, dragline, trenchoe, clamshell, liftcrane, and magnet crane front ends available.

INVOLUTE-SPLINED SHAFTS

Shafts in upper works and crawlers are involute-splined for greatest strength. Wear is reduced . . . replacement is seldom necessary.

Circle Service No. 42

After 17 trips through the kiln there is not a single crack in the SRC carblocks being used by Isenhour Brick & Tile Co.

NOT ONE CRACKED CARBLOCK AFTER 17 TRIPS THROUGH THE KILN

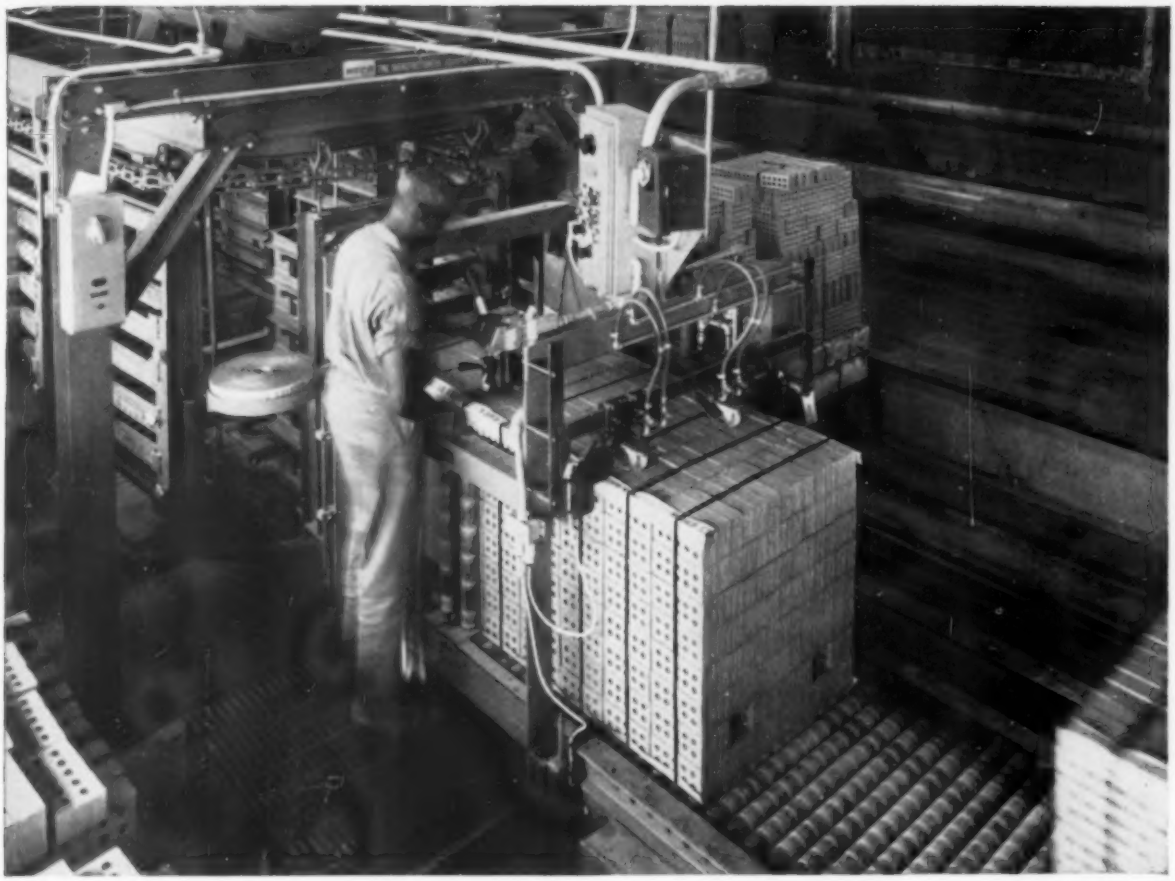
A loaded kiln car ready for firing through the 530 foot long Isenhour kiln. The kiln is fired by gas and has a cycle of 66 hours with a maximum temperature of 2060°F. Each of the 44 kiln cars in the kiln at one time holds approximately 8½ tons of brick.

Isenhour Brick & Tile Co., Salisbury, N. C. changed to Remmey SRC carblocks and increased the service life of cartops from a former maximum of 8 weeks, to more than 14 months. Operating and refractory replacement costs were, naturally, greatly reduced. SRC blocks offer tremendous resistance to thermal shock and mechanical abuse. ***To lower your production costs through longer carblock service life . . . Write or call . . .***

A. P. GREEN FIRE BRICK COMPANY
MEXICO, MISSOURI
Manufactured in Philadelphia by
THE REMMEY DIVISION
In Canada, A. P. Green Fire Brick Co., Ltd., Weston, Ontario

REMMEY

Circle Service No. 43



7 men blend, stack, and strap over 100,000 brick per shift

If you produce 60,000 or more brick per day in one plant and want them packaged at least cost, a Signode-MECO machine like this one at Columbia Brick and Tile Co., Columbia, S.C., will be of real interest. It offers many advantages over other volume brick packaging methods:

- the MECO conveyor system is designed to minimize lifting and reaching while the brick are blended and stacked.
- packs of 75 to 125 standard, Norman, or Roman brick are compacted by hydraulic rams to eliminate stacking voids and are then secured in a tight, steel-strapped package by a Signode pneumatic all-power AMP strapping machine used with a Signode power strap feeder.
- continuous paper corner protectors are automatically applied and cut off between multi-packs to speed lift truck handling. Take-off conveyor handles peak production surges without the constant attention of a lift truck driver.

Every Signode installation is custom engineered. Signode field engineering service and brick packaging tools and machines are available to make any production volume fast and efficient, whether you need more or less automation than at Columbia. Your inquiry is invited.

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.

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Offices Coast to Coast, Foreign Subsidiaries and Distributors World-Wide

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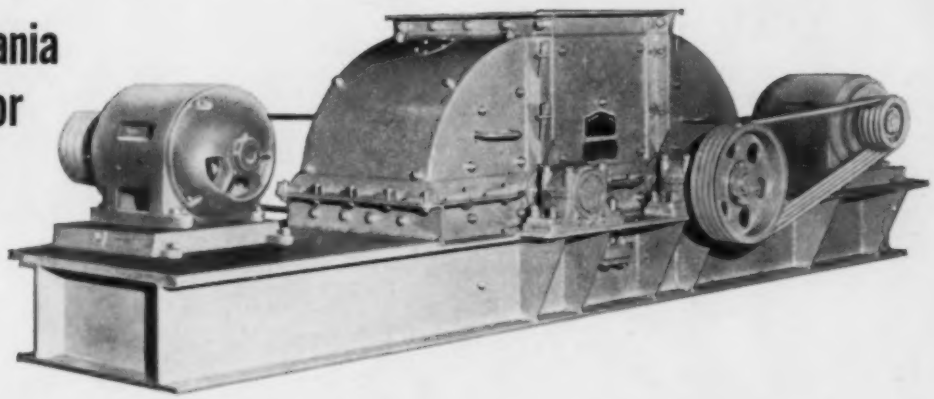
Circle Service No. 44

THERE'S A NEW AND BETTER CRUSHER FOR WET CLAY OR SHALE...

Pennsylvania Twin-Rotor Impactor



Now there is a crusher specially designed for efficient reduction of wet, sticky clays and shale, and other similar materials. The new Twin-Rotor Impactor produces a maximum of fines by impact crushing *exclusively*. No cage bars to plug. No excess power use through needless rubbing.

Even when loads are unusually sticky, crushing time is never lost by shutting down the Twin-Rotor Impactor to clean off adhering material. Instead, gas torches are played into spaces between the liners and the frame. Wet sticky materials do not cling to the hot liners but drop straight into the crushing path of the whirling hammers. Production continues at maximum capacity.

The Twin-Rotor Impactor performs best as a secondary crusher in brick and tile plants, but also has applications as a primary crusher and as a tailings reducer for maximum feed sizes to 8 inches. Rated capacities to 100 TPH of 100 percent minus 8 mesh product. Check these additional features:

- No cage bars—fewer parts to buy or maintain.
- Shipped complete with motors mounted on frame—easily and inexpensively installed.
- Runs without vibrating—does not require a massive, expensive concrete foundation.
- Quickly removable end covers provide access to all internal parts including bottom liners, for low cost, easy maintenance.

Rugged Bath-built construction coupled with other Pennsylvania features such as dust seals, renewable tip hammers and flexibility for desired product gradation provides an outstanding crusher—job-engineered for wet clays and shale.

FREE BULLETIN

Complete data on Twin-Rotor Impactors is available in Bulletin 6020. Send for your free copy today.

PENNSYLVANIA CRUSHER DIVISION
BATH IRON WORKS CORPORATION
WEST CHESTER, PENNA.

• New Pennsylvania Twin-Rotor Impactor installed at Triangle Brick Company plant, Durham, N. C.

PENNSYLVANIA CRUSHERS

BATH-BUILT

Circle Service No. 45

NOW... from Chemical Products Corporation Research

A PRIMER WEATHER CAN'T BREAK DOWN

Photo courtesy Gladding, McBean & Co.

for CHEM-O-SOL® *Clay Pipe Joints*

Product of years of laboratory research . . . thoroughly field-tested, this new Chem-o-sol Primer offers the clay pipe manufacturer three important advantages.

Completely waterproof. Gaskets stick to the pipe under the severest conditions. No loosening of the gasket due to water, rough handling, temperature extremes. For the first time durability has been combined with good initial adhesion in a primer.

Activates over wider range of pre-heating temperatures (260°–325°). This permits more latitude in production control.

Sticks to hot pipe immediately. Good hot strength reduces cooling-down period to a minimum and speeds production.

Here, at last, is a primer that fully meets the needs of the clay pipe industry. Such product improvement could come only from the research laboratories of a company that pioneered in the development of plastisol formulations for gasketing. For more information or samples write, or telephone GEneva 4-1770.

It adds still another PLUS to these production advantages of CHEM-O-SOL

- ***Fast flow for rapid mold filling***
- ***Proper gelling rate to eliminate dripping***
- ***Fast fusing for short production cycle***
- ***Good hot strength for easy mold stripping***

Produced in the world's largest plant of its kind, Chem-o-sol is formulated in batches up to 15,000 lbs. to assure consistent handling properties and stability. That's why, with Chem-o-sol, you can offer your customers optimum gasket performance.

CP

CHEMICAL PRODUCTS CORPORATION

KING PHILIP ROAD, EAST PROVIDENCE, R. I.

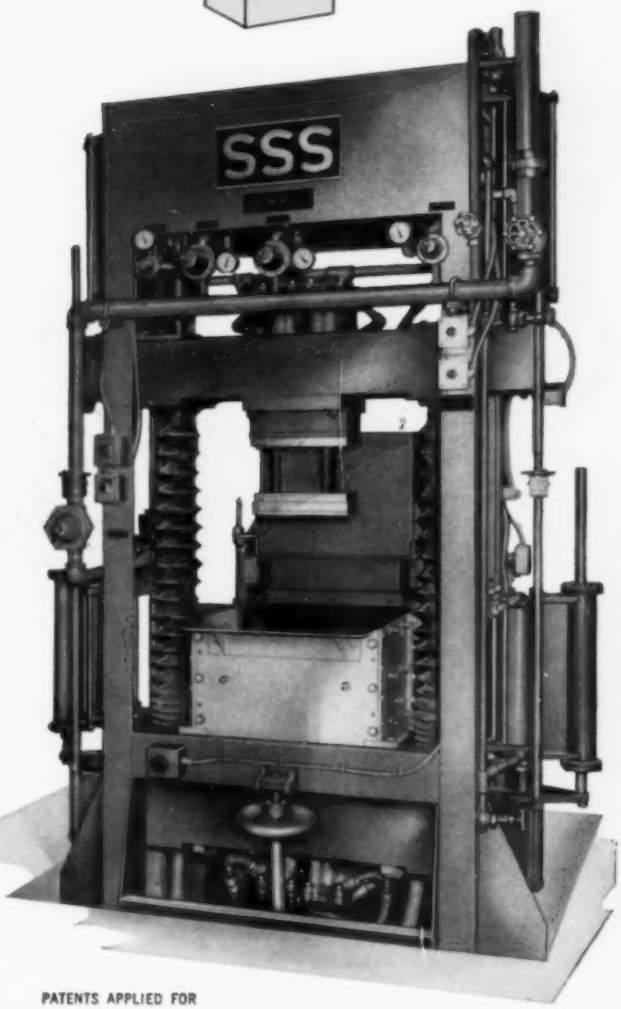
Circle Service No. 46

NOW . . . you can make

LARGER...THICKER...MORE INTRICATE Shapes

with the

SUPERIOR PNEUMATIC IMPACT PRESS



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Make them

at HIGHER SPEED

at LOWER COST

Lower equipment cost...lower installation cost ...lower operating cost! You get ALL THREE with the new SUPERIOR Impact Press. And you can make *larger, thicker, more intricate shapes* with most any refractory material!

The SUPERIOR Impact Press is not only capable of handling dry press material but it is also excellent for shaping stiff mud materials. Many shapes now being hand-moulded may be economically made on this machine which are tremendously superior in physical size and density. Complete outfit change is fast and easy.

Here is a complete new press—including Charger Assembly and Control System—just waiting for you to get acquainted with its profit making possibilities in your own plant.

WRITE FOR LITERATURE

New literature on the Superior Press is available for the asking. Don't delay! Write us TODAY for your copy.

1. Positive Step Sequence Control.

a. 220 volts. 32 cycling combinations at the flick of switches.

b. Automatic operation.

c. Semi-automatic operation.

d. Safety emergency stop.

2. Full Pressure and Flow Control of All Air Circuits.

Manufactured by SUPERIOR SUPPLY SERVICE, INC., Fairfield, Alabama

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THE OHIO FIRE BRICK COMPANY, OAK HILL, OHIO • MUtual 2-3411

Exclusive Sales Agents in U.S. and Foreign Countries

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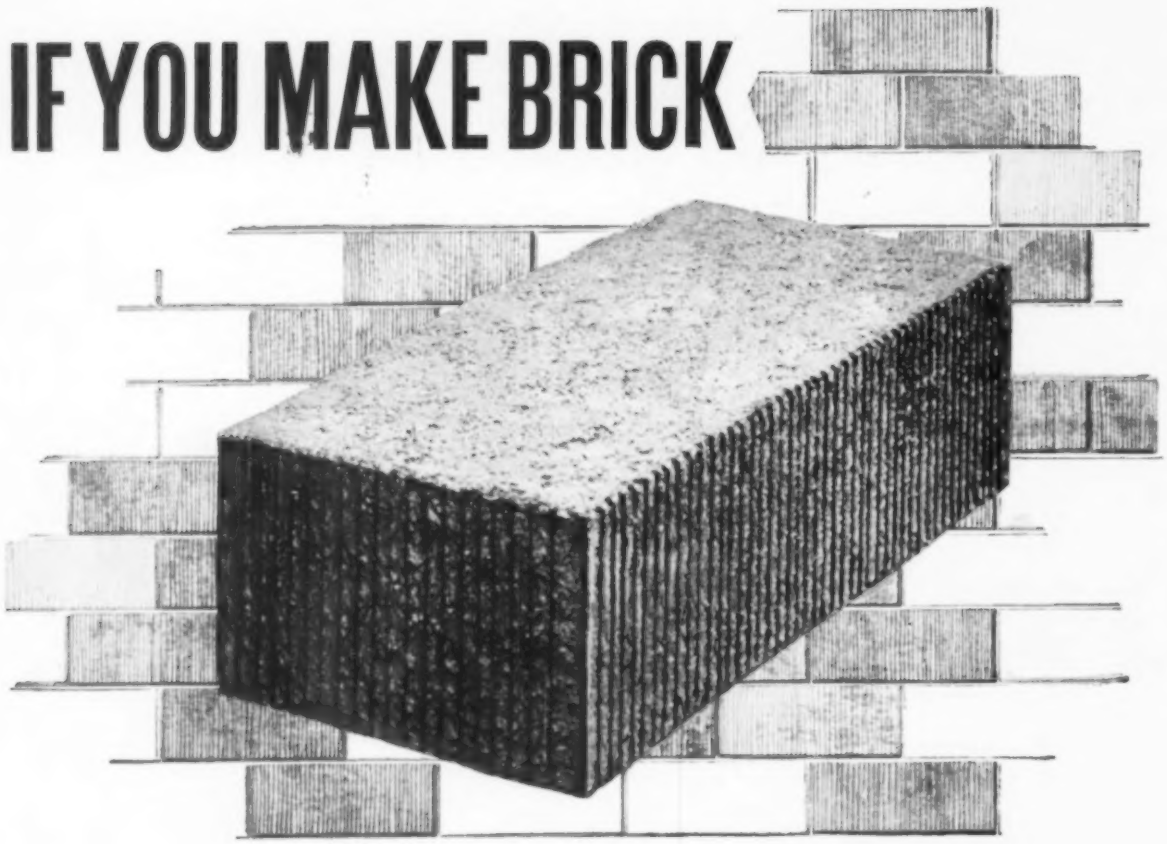
IF YOU MAKE BRICK



we can show you how to COLOR it!

Until recently, brick coloring was largely confined to the use of colored glazes, yet relatively few manufacturers could fit glazing into their brick-making processes. As demand increased for more and more color on brick, we developed economical coloring methods which all face brick manufacturers can use. Colored engobes and colored sands are a direct result of our research, so Drakenfeld can now offer a coloring material to suit almost any brick processing setup.

Whatever your plans for producing colored brick, an experienced team of Drakenfeld color ceramists will gladly assist you with prompt, dependable solutions to your coloring problems. We cordially invite your inquiry.

SAND COLORS: If you use a sand mold, sand blast, or any kind of sand finishing operation, Drakenfeld has a complete palette of colors for you. They are colors you merely mix with your sand and apply by your normal sand coating technique. No change in processing—no special processsing required. The cost is low.

ENGOBE STAINS: Engobes can provide a permanent colored surface for your brick at low cost. Engobe formulas available on request. The mixes are easy to prepare.

GLAZE STAINS: Strong yellows, clean pinks, stable blue-green and grays. A complete line of quality stains . . . laboratory controlled to insure maximum workability and uniformity.

GLAZE SPECKS: Years of leadership in speck production enable us to recommend the best speck for your needs, sized to exacting specifications.

PREPARED GLAZES: For brick manufacturers who wish to produce limited quantities of glazed brick without investing heavily in glaze preparation equipment. These glazes are supplied completely ground and ready to mix with water. Wide range of brick and pastel colors are available.

Drakenfeld

YOUR PARTNER IN SOLVING COLOR PROBLEMS

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SUSTAINING ASSOCIATE SCRI

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Pacific Coast Agents:

BRAUN CHEMICAL COMPANY, 1363 So. Bonnie Beach Place, LOS ANGELES 54, California, Phone: ANgelus 9-9311

BRAUN-KNECHT-HEIMANN COMPANY, 1400 Sixteenth Street, SAN FRANCISCO 19, California, Phone: HEmlock 1-8800

Circle Service No. 48

Editorial

Big Chance for Local Promotion

Several months ago, BRICK & CLAY RECORD proposed a method of financing local promotion and advertising. Specifically, it was suggested that sample panels be passed on to dealers at a charge of $5 per panel. However, the $5 would be refunded by the manufacturer if the dealer would match the $5 with another $5 and spend the entire $10 on local advertising and promotion. Both the dealers' and manufacturers' agencies would set up and carry out the advertising and promotion programs. We said it would add $2,000,000 for the purpose at local levels, but, if carried out completely, it could be double that amount.

Eleswhere, in the issue is a summary of the Region 4 advertising and promotion program which is a rather significant departure from the usual thinking in regional promotion of clay products. It is worth your time to turn back to it and study the program.

The point we want to make is the great potential that exists for clay products advertising and promotion. We have ways to finance such programs and we have men in the industry with ideas for programs. If we would put them together, there would be no building product anywhere which would have greater support than our own.

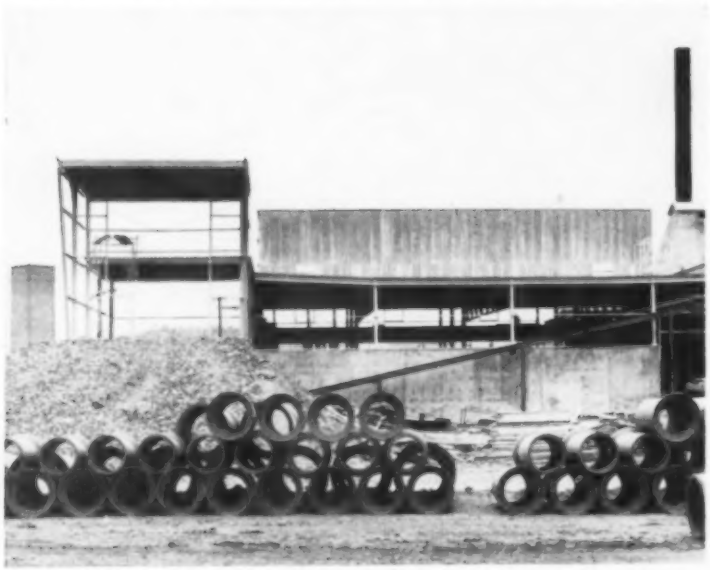
The beautiful part of it would be its directness. Certainly each company's panels would be used efficiently—because of the cost. Each company individually and each dealer individually would benefit directly because his product would be advertised and promoted—in his territory. Such specific programs backed up by regional efforts such as that of Region 4 and further backed by programs created by SCPI, would certainly create a desire and demand for clay products heretofore unheard of.

J. J. Lee

Editor & Publisher

NEWS OF THE INDUSTRY

Texas Vitrified Constructs New Plant



New Tex-Vit building now under construction will expand and modernize the clay grinding plant area at the Texas Vitrified Pipe Co., in Mineral Wells, Tex. Work also is progressing toward early completion of a new 100-ton Swindell-Dressler tunnel kiln, which is expected to increase the company's vitrified clay pipe production by about 40%.

Sea Train To Carry Brick From Augusta to New York

The first carload of brick destined for the New York area via "sea train" recently left the Merry Brothers Brick and Tile Co., Augusta, Ga.

Company officials said the car loaded with 24,000 brick, would be moved by rail to Savannah. There it will be picked up bodily and placed aboard ship. If this pilot operation proves successful other shipments via "sea train" will follow.

Clayeraft Firm Maps $1½ Million Expansion

A two-pronged expansion program totaling $1½ million in new plant equipment has been announced by Phillip Tefft, president and general manager of the Claycraft Co., Columbus, O.

Tefft said plans include construction of an entirely new plant with a substantial output to replace one of the local plants. The firm will also install new equipment at its Upper Sandusky, O., plant for the molding and drying of sand mold brick.

In addition to two plants in the Columbus area and the Upper Sandusky plant, Claycraft also operates plants at Sugarcreek and Shawnee, O.

Vitrified Clay Sewer Pipe Standard Issued By OTS

A printed edition of Commercial Standard CS224-60, Vitrified Clay Sewer Pipe is now available, according to the Commodity Standards Division, Office of Technical Services, Business and Defense Services Administration, U. S. Department of Commerce.

The Commercial Standard provides a primary reference to existing nationally recognized specifications for standard strength and extra strength vitrified clay sewer pipe. A means of indicating compliance with the Standard is included.

The Standard was initiated by the National Clay Pipe Manufacturers, Inc., and has been endorsed by a representative cross-section of the industry. Copies may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., price 10 cents.

Indiana Pipe Firm Buys Phoenix Plastic Firm

A subsidiary of the Cannelton Sewer Pipe Co., Cannelton, Ind., has purchased all the common stock of the Ken-Way Plastic Products Corp., Phoenix, Ariz.

The purchasing company is the Southwestern Plastic Pipe Co., Mineral Wells, Tex.

Wrestling Coach Receives Brick at Season End

Ever wonder what you should give to your college wrestling coach at the end of the season?

University of North Carolina wrestlers came up with this: they presented Coach Sam Barnes with 1000 brick (delivered by truck, not thrown) to pave his patio.

The coach is reported as saying the brick he received ranks as high as the gift he received at the end of the 1954 season when the team gave him a wheelbarrow.

Potts Retires

Amos Potts, ceramic engineer for the Logan Clay Products Co., Logan, O., has announced his retirement, after more than fifty years in the clay business.

Metropolitan Brick Reelects Officers

All officers of Metropolitan Brick, Inc, Canton, O., were reelected recently by the board of directors following the annual shareholders meeting held in Canton.

Also at the meeting, company president Donald J. Renkert, in his report to shareholders, said that although the first quarter of 1961 showed a

loss, due principally to inability to ship because of extremely bad weather nationally, current sales are showing a marked increase over the same period for 1960.

Talbott Joins American Vitrified Products

Paul T. Talbott has joined the American Vitrified Products Co., Cleveland, O., as assistant superintendent of its clay division, a newly created job. He was formerly with H. K. Porter Co.

Introduces New Glazed Face Brick

A new Lincoln glazed face brick line has been introduced by the Gladding, McBean & Co., Los Angeles, Calif. The textured ceramic coating on the Norman-size brick offers architects for the first time an extremely wide choice of permanent colors in this traditional facing material.

The line contains 25 architect selected standard colors. These are available in bright glaze, stain or matte finish. The rough texture adds the rich appearance of custom design. The ceramic glazed surface not only insures permanent color, but also provides an easy-to-clean surface for inexpensive maintenance . . . . merely wash down with water.

Brick Maker Sells To Gladding, McBean

Gladding, McBean & Co., Los Angeles, Calif., has acquired Harrisville Brick Co., Ogden, Utah, producer of face brick, for an undisclosed price. The purchase was for cash.

Harrisville had sales last year of about three-quarters of a million dollars.

New Chicago Building Uses Abundance of Brick

The United of America Building being built in Chicago, Ill., it has been reported, will use reinforced brick as an economy measure as back up for the marble veneer of the outside walls. This move was taken at the recommendation of the A. L. Jackson Co., Chicago, who like brick and have sources and craftsmen to handle the product.

Wilcox Elected To Chamber of Commerce

James W. Wilcox, president and general manager of the Alliance Clay Products Co., Alliance, O., will be at the helm of the Alliance Area Chamber of Commerce activities during this year as president. He served from 1950 to 1960 as vice president.

15 Employes Recalled To Work at Claycraft

The employment picture brigthened recently in Shawnee, O., when the Claycraft Co., plant recalled 15 workers, bringing the total work crew at the plant to about 95 employes. At the time of this report company officials were predicting that the payroll of the plant would reach 130 in a short time.

The upswing in employment came when the plant activated a second kiln. The 15 men were needed to get the kiln under way, with the remaining 35 to be called when the manufacturing process reaches the production stage.

Increased orders were given as the reason for opening of the second kiln.

Appoint Representative For Brick and Tile Makers

Willard W. Dikeman has been named architectural representative for the Structural Clay Products Institute, Washington, D. C., Board Chairman Douglas Whitlock announced.

Dikeman's appointment is part of an increased emphasis by SCPI on its laison with architects who work on a national level. As a staff member of the SCPI Engineering and Technology Department, Dikeman will work closely with architects in New York, Chicago and Detroit. His office is at Room 826, Chrysler Building, New York City.

Beauty Of Face Brick Highlighted

The beauty of face brick is highlighted in this attractive, permanent display of the Evans Brick Co., Uhrichsville, O., in the Architectural Building, New York City. The display features panels of Tebco Face Brick, available in four textures—smooth, vertical scored, mat and velour; and in three sizes—standard, Roman and Norman; and full color photographs of Tebco Face Brick installations.

Report Good Business in Phoenix Area

Wallapai Brick & Clay Products Inc., has reported good business in the Phoenix, Ariz., area. Shown here are (left to right): C. N. Harvey, L. G. Harvey, M. H. Harvey, who own and operate this stiff mud plant that makes up to 90,000 brick per day. Looks like they are enjoying that good Phoenix weather, too!

Stark Ceramics Finishes Expansion

Picture shows the new expanded production facilities at Stark Ceramics, Inc., East Canton, O., which has increased the plant's production by 40%.

Stark Ceramics, Inc., East Canton, O., recently announced the completion of its $1.35 million expansion program.

The program included the construction of a 540 x 260 foot structural tile building and installation of two direct-fire car tunnel kilns and a tunnel dryer. The kilns are 346 feet long.

John H. Stewart Jr, president of the firm said production capacity has been increased 40% and the plant can produce 8 million brick equivalents a month.

The plant has a total of 46 kilns in operation now. The company has also expanded its research facilities and developed several new products which are successfully being introduced to architects and contractors.

Toledo Architect Wins Paris and Rome Trip

First prize in the Sculptured Tile Contest conducted among architects and contractors by Stark Ceramics, Inc., Canton, O., an all-expense trip to Paris and Rome for two, was won by Charles H. Stark of Bellman, Gillet & Richards, Toledo, O.

A duplicate first prize was awarded to Stanley Corl representing Kuhlman Builders Supply & Brick Co., the Stark distributor in Toledo.

Clay Pipe Bill Passed By Ohio Committee

The Ohio House Natural Resources and Mines Committee recently approved Rep. Jess Dempster's Clay Pipe Use Bill by a 7-3 vote with one member abstaining.

The bill now goes to the Rules committee to be placed on the calendar for hearing on the House floor.

The bill would require the State Highway Department to use vitrified clay pipe in sizes of 4 to 36 inches for highway drainage where caustic or acidic wastes are present.

Report Unfavorable Bills

Two Senate bills; namely S.1089 and S.1197 and one House bill, H.R. 5937 have recently been introduced, which if passed will have a serious affect on the ability of railroads to establish competitive rates.

Fall Meeting in Florida Announced By NCPMI

The fall meeting of the National Clay Pipe Manufacturers has been scheduled for October 29th through November 2nd at Key Biscayne Hotel and Villas at Key Biscayne, Fla., President G. A. Robinson of NCPMI announced recently.

Among the principal items of business to come before the meeting will be a review of activities in NCPMI's expanded advertising, public relations, and research program during the past year and plans for implementation of the program during the year ahead, Robinson said.

Reports will be heard from D. H. Winans of Gladding, McBean & Co., Los Angeles, Calif., chairman Advertising and Public Relations Committee; R. H. Anderson of Robinson Clay Product Co., Akron, O., chairman Research Committee; O. L. Dick-

Student Wins First Harry C. Bates Scholarship

James W. Oates, 17-year-old California high school student smiles proudly as his father, James Oates, Sr., congratulates him after learning that his son was selected to receive the first Harry C. Bates Merit Scholarship from the Bricklayers, Masons and Plasterers' International Union. Oates has indicated that he will use the $1,500 scholarship, named after Union President Emeritus Harry C. Bates, to study civil engineering at Stanford University, after which he plans a career as a general contractor. The scholarship was established as an annual award by the BM&PIU and is part of an educational aid program to enable children of a union bricklayer to attain a higher education.

inson of Southern Clay Pipe Institute, Atlanta, Ga., chairman, Operating Committee, and M. R. Hardin of W. S. Dickey Clay Manufacturing Co., Kansas City, Mo., chairman, Depletion Committee.

Attendance of approximately 125 people is expected.

Cahners Develops Information Service

A unique new facility which will help speed up production in the nation's aerospace and electronic industry has been formed by the Cahners Publishing Co., Boston, Mass., and the Narragansett Capital Corp., Providence, R.I., and is being used extensively in 83 plants throughout the nation.

Called "VSMF—The Microfilm Catalog File", the new system was developed by Information Handling Services, Inc., Denver, Colo.

Officials in the plants using this new system say it has a potential to save thousands of dollars annually by drastically reducing the time engineers and purchasing agents spend searching for product information.

A recent survey showed that the average design engineer spends about 15% of his time, or some 300 hours a year, looking for product and specification data. The new VSMF system is expected to reduce that time by 90%.

According to Richard H. O'Brien, president of Information Handling Services, Inc., the VSMF system was developed at the request of a number of top management engineers in the aerospace and electronic industry.

O'Brien said the new system works this way: the engineer or purchasing agent looks up the item he wants in a copyrighted index, which has been completely cross-referenced for easy use.

This index refers him to a reel of microfilm which contains detailed information regarding the product in which he is interested.

The product specifications appear before him on a TV-like screen. By means of a photo-copy device atop the viewer, he can quickly make a black and white copy of the image on the screen.

The VSMF system also gives him the name and address of the nearest sales offices of the manufacturers who supply that product.

To be sure that the product information is current, the microfilm reels are replaced every four months.

The first edition of this communications facility was developed for the aerospace and electronic industry.

Make Largest Clay Pipe With Compression Joint

The world's largest clay pipe with a factory-made compression joint has just been manufactured by Gladding, McBean & Co., Los Angeles. The pipe, 42″ in diameter, 5′ long and 2,800 lbs in weight, is being installed in Hoquiam, Wash.

Previously a 39″ diameter was the largest such pipe ever made.

With the advent of the 42″ diameter, the advantages of the speed seal compression joint will be made available for the first time throughout the complete range of clay pipe sizes.

The joint, introduced in 1957, reduces in-the-ditch costs through easier and faster installations.

"Buy A Brick A Day" New Hospital Fund Promotion

"Buy a Brick for Westlake" was the theme of a unique house-to-house campaign, which was held recently on behalf of the Westlake Community hospital expansion program in Melrose Park, Ill.

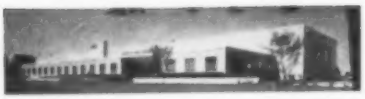
Obituaries

George Ullom

George Ullom, 55, of Birmingham, Ala., died of a heart attack recently while playing golf. Mr. Ullom was district sales manager of the Harbison-Walker Refractories Co.

Otto M. Reif

Otto M. Reif, a retired vice president of the Harbison-Walker Refractories Co., died recently. Mr. Reif retired in 1931, but continued as director of the firm until his death.



SCPRF News

P. B. Belden, Jr., president of the Belden Brick Co., carries a name that has been an honored one for over 75 years in the structural clay products industry. In his capacity as the current president of the Structural Clay Products Institute, Belden acts as SCPI's representative on the Executive Committee of the Foundation's Board of Management on which he also serves as one of SCPI Region 4's representatives.

"Bud", as he is more familiarly known by his many friends in the industry, received a degree in commerce from the University of Notre Dame in 1932. From graduation until

1942 he served in a number of capacities in both production and sales for the Belden Brick Company. Upon his discharge from a 4 year term of service in the U. S. Army Air Corps in 1946, Belden succeeded his father, P. B. Belden, Sr., as president of the company carrying their name, a position he still holds.

Since 1952, Belden has served on the Board of Directors of Structural Clay Products Institute and on its Mason Relations and Executive Committees. He was elected president of SCPI in 1959 and is now completing his second term. Bud has, in addition, been most active in Region 4 SCPI affairs, having been a member of its board since 1952 and serving as president from 1956 to 1958.

Outside business interests include membership on the Boards of such varied groups as the Belden-Stark Brick Company (both Detroit and New York), First National Bank of Canton, O., Canton Downtown Development Corp., Canton Parking Corp. and two Canton realty companies.

Bud is active in community affairs also, having served as chairman of the Community Fund and the Stark County U. S. Savings Bond Division of the Treasury Department. He is a past president of the Canton Chamber of Commerce and is currently serving as a director for the Buckeye Area Council of the Boy Scouts of America and the Canton Welfare Foundation.

Belden is carrying on in the fine tradition established by his father as a leader in the structural clay products industry nationally and in community affairs at the local level.

* * *

A recent McGraw-Hill survey indicates that all industries with plans for growth are increasing their research and development spending. It is interesting to note that 84% of the money that will be spent in R&D will be for commercial products as compared with military products. This means that the rate at which business introduces new products will also be stepped up. In 1960, 10% of all manufacturing sales were in product lines not being made in 1956. It is estimated that, as a result of increased expenditures in R&D, by 1964 new products will account for 14% of all sales.

In 1960, 9% of all sales in the stone, clay and glass industry were made up of new products not made four years earlier. McGraw-Hill predicts that this will rise to 13% in 1964. In 1960, this industry group, into which structural clay products falls, spent a total of $86.1 million dollars on research and development. This is expected to increase to $90.4 million this year and to $111.2 million by 1964.

* * *

For a long time, those who are promoting the use of the "SCR masonry process"* to lower the in-the-wall cost of brick and tile have felt that much of the bricklayers' skepticism and resistance to corner poles would be eliminated if they had been introduced to this concept of masonry construction during their apprenticeship —or even before. SCPRF field man Bob Gray had the opportunity to do just that recently when he conducted a clinic on the "SCR masonry process" for 36 young bricklayer students at the Williamson Free School of Mechanical Trades in Media, Pa.

The bricklaying students in this outstanding trade school take a 3 year course during which they not only receive practical instruction and training in actual laying of brick, but are also given training in blueprint reading, estimating and related subjects. The graduates are much sought after by mason contractors in that area and the Union credits each with as much as 3 years on the normal 4 year apprenticeship. This speaks well of the quality of instruction they receive.

SCPRF's man reports that the bricklaying instructor and the students were most interested and cooperative. The senior boys spent about 1½ hours laying brick with corner poles and quickly adapted themselves to the new technique.

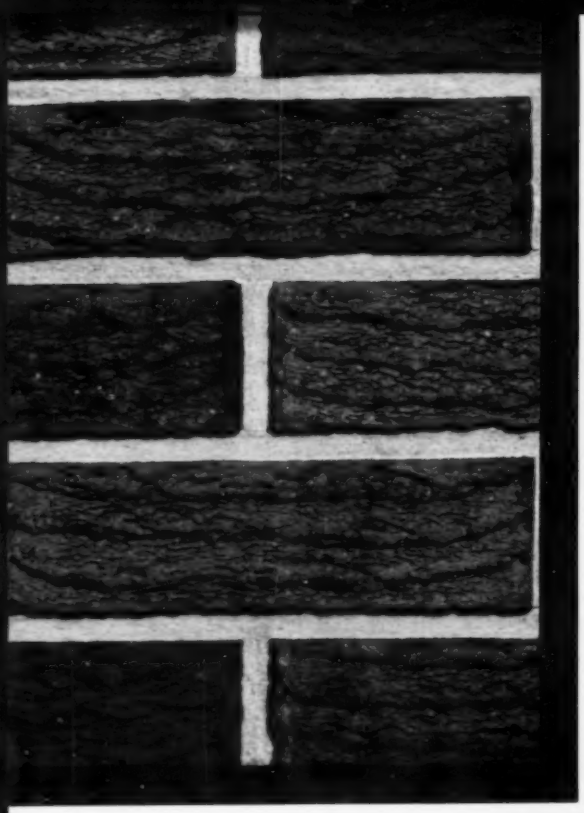
If all young men entering the bricklaying profession could receive instruction and training in the use of the corner pole and marked line in their pre-apprentice schooling, or during their apprenticeship, the job of getting their acceptance by the trade would be much simpler.

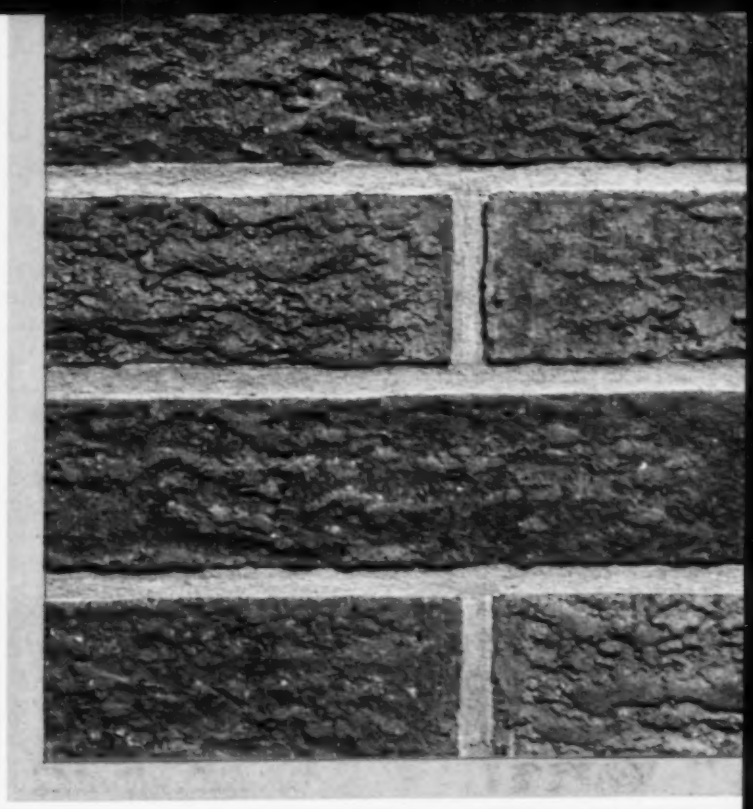
* * *

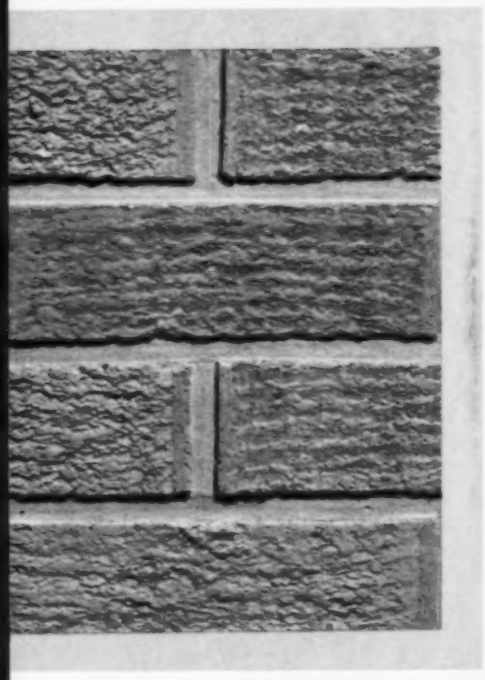
*Reports from manufacturers producing "SCR accoustile"** indicate that sales of this new product of research are increasing as more and more architects are becoming aware of the economics of being able to combine sound absorption properties with the structural, aesthetic and low maintenance properties long enjoyed by structural clay facing tile. "SCR acoustile" combines high sound absorption with relatively low sound transmission—a combination of desirable acoustical properties found in few other materials. At the same time, other desirable properties have not been sacrificed.*

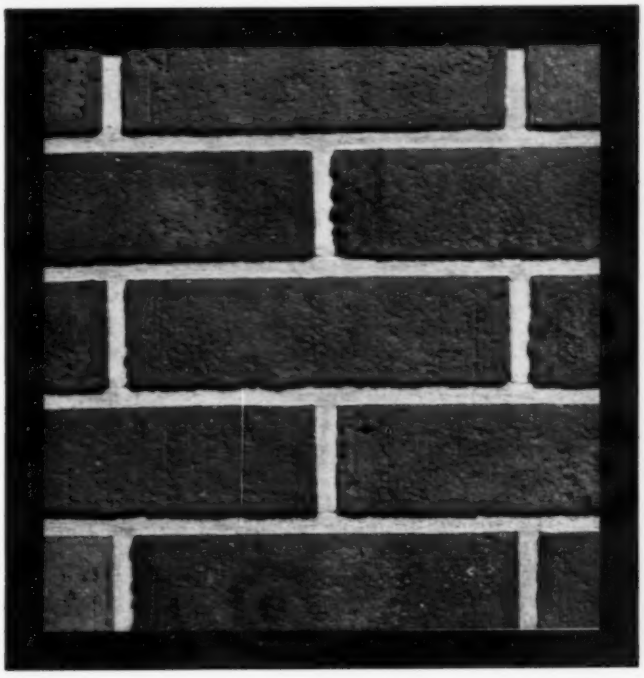
"SCR acoustile" is a result of SCPRF's end-use research. In this case, the objective was to add a new and desirable property to an already established industry product in order that markets for that product can be expanded.

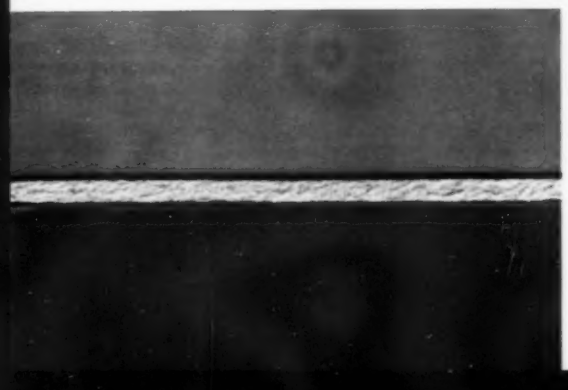
*Reg. T.M., Pat. Pend., SCPRF
**Reg. U.S. Pat. Off., Pat. Pend., SCPRF











Better Brick Production

Another Report by

FERRO

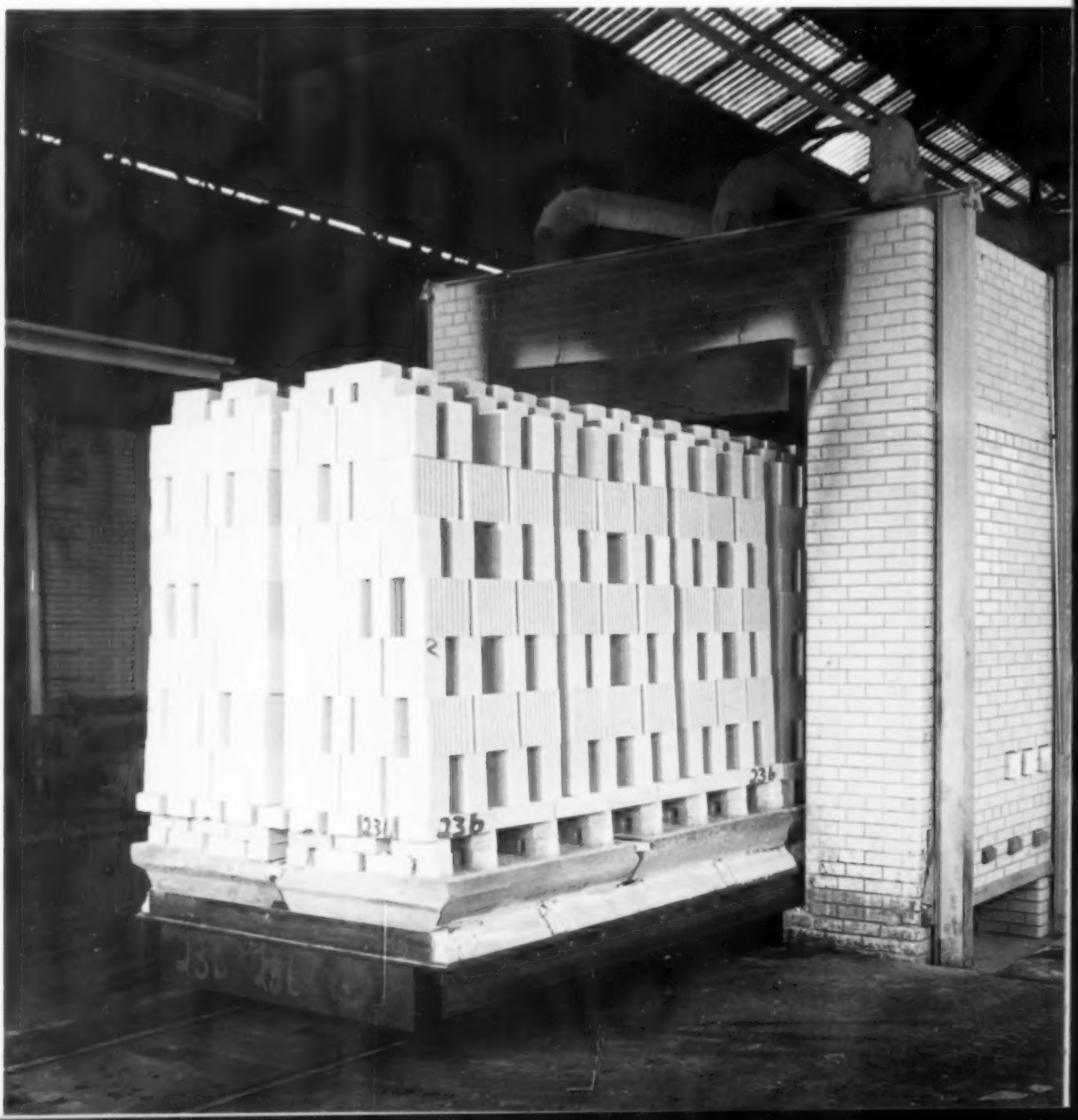
Better brick production cuts costs, helps

Brick today has many "faces", many surface textures, myriad colors, a variety of shapes and sizes. Needless weight has been eliminated. Cross-breaking and crushing strength is much greater. New quality-controls in production assure close uniformity in product.

Brick has definitely held its own in a market ever growing more competitive. It is an attractive, flexible, thoroughly *modern* building material. Through technological advances and development of more efficient equipment, brick production has become highly mechanized. The whole manufacturing process has been greatly improved, as has the marketing of the products including packaging and promotion.

Ferro's *Allied Engineering Division* has played no small part in making brick production a bigger, better and more profitable business. Many of the largest, most modern plants were designed by Allied. The newest kilns in other plants carry the Allied name. Still other kilns have been rebuilt or modernized—equipped with more accurate and dependable firing controls.

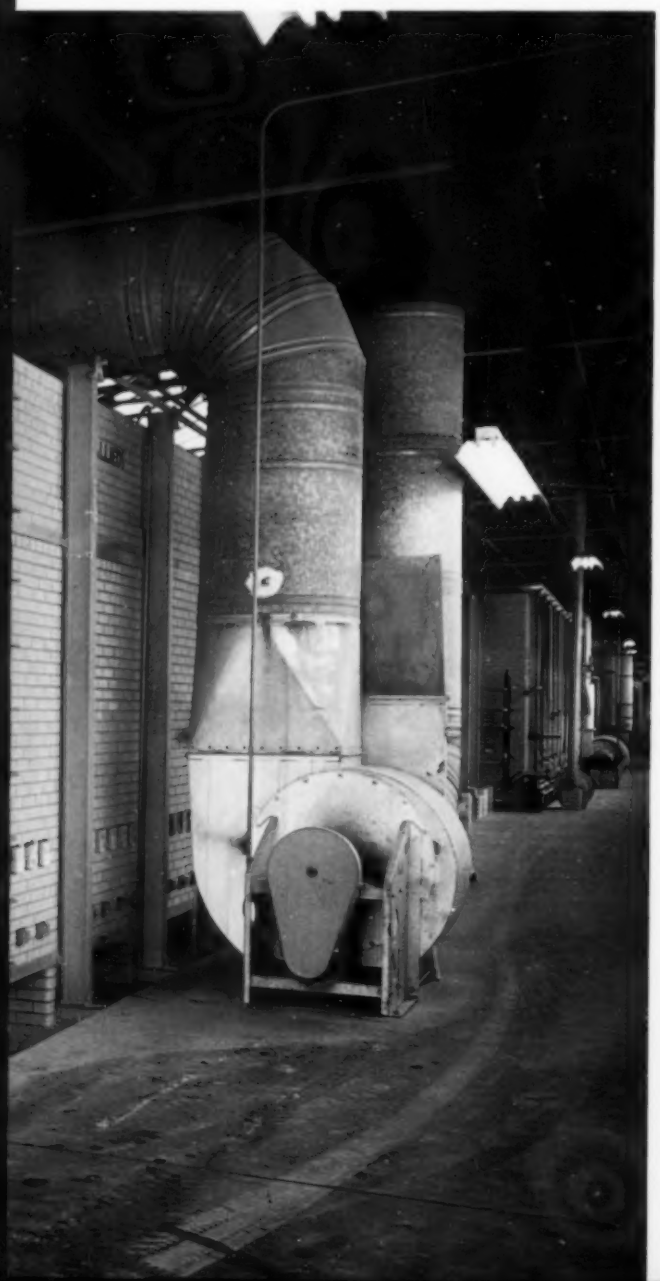
Ferro's *Glaze-Color Service* has contributed to the development of colorful, highly glazed brick for

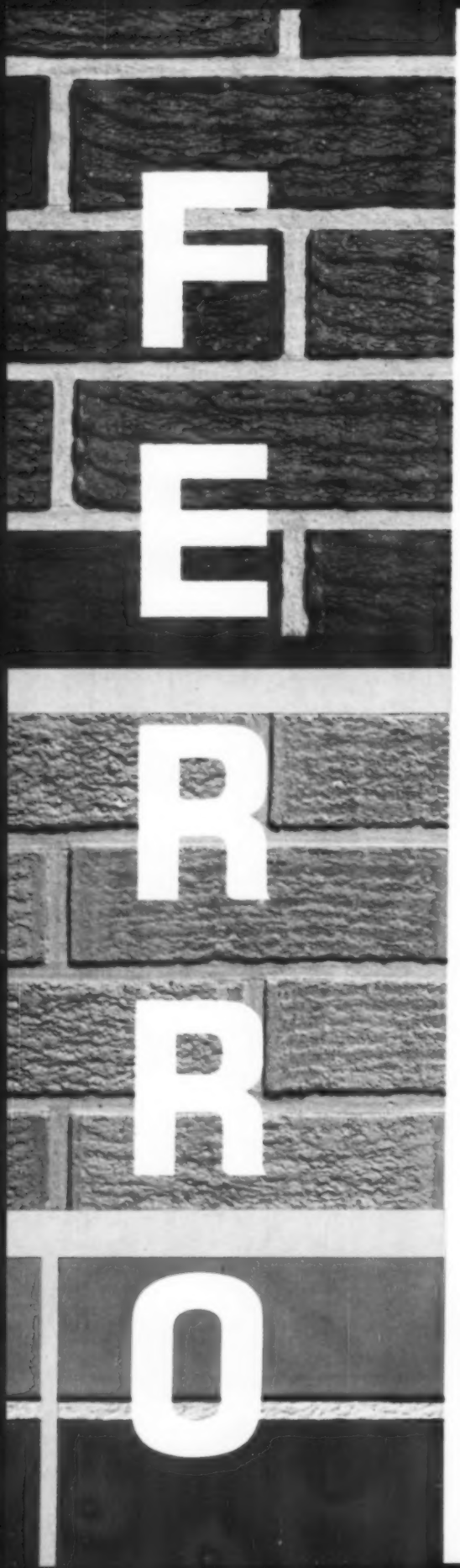


build bigger sales

decorative use. New colors have been introduced. New standards reached in uniformity of the glaze-frits supplied for brick production. Joint research has ironed out many troublesome production and quality-control problems.

In all phases of brick making—common, decorative, or the revolutionary, pre-calcined body "brick blocks"—Ferro has made it *its business* to stay on top of developments. This "know how" is constantly being passed on to our customers. By helping *you*, we help ourselves—and together build a stronger, more prosperous industry.





Production of BRICK is our business, too!

There are many problems in the manufacture of brick that FERRO has encountered in its 30 years of serving this industry. Finding the answers isn't always easy, but our broad knowledge and experience have helped many companies to do so. If you need help on present production—or are looking for ways and means of improving your over-all operations—you'll find it profitable to call us in. *Five divisions stand ready to serve you.*

ALLIED ENGINEERING Division
Kilns, driers, controls, engineering service
CLEVELAND 5, OHIO

COLOR Division
Stains & oxides
CLEVELAND 5, OHIO

FRIT & GLAZE Division
Glaze frits, glaze-color service
CLEVELAND 5, OHIO · NASHVILLE 11, TENN.

REFRACTORIES Division
Setters, other kiln furniture
CESCO PLANT—CROOKSVILLE, OHIO
LOUTHAN PLANT—EAST LIVERPOOL, OHIO
ACF PLANT—TYLER, TEXAS

PORCELAIN Division
Grinding balls, mill linings
EAST LIVERPOOL, OHIO

FERRO—LOS ANGELES
A complete service for the West
LOS ANGELES 39, CALIFORNIA

FERRO

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In Canada: Ferro Enamels (Canada) Ltd., Oakville, Ont.

LITHO. IN U.S.A.

TRADE NEWS

Universal Atlas Names Two

The retirement of Frank E. Lobaugh, manager of Lumnite Sales and Service, after 20 years of service with the Universal Atlas Cement Division, of United States Steel, New York, N. Y., was announced recently by James C. McClure, vice president-general sales of the division.

H. T. Swanson

B. Chiari

At the same time, it was announced that a direct successor would not be named. It was explained that Lumnite Sales and Service, which Lobaugh has headed for the past thirteen years, would be merged with the division's Atlas White Cement Sales. The newly-formed organization, which became effective March 1, is known as Atlas White and Lumnite Sales, and is headed by Harry T. Swanson, manager, with Bruno Chiari as assistant manager.

Philadelphia Quartz 130 Years Old

The Philadelphia Quartz Co., Philadelphia, Pa., will celebrate its 130th anniversary in July of this year. The company is a large supplier of soluble silicates to the industry. The first silicates ever sold by the company were January 21, 1861, and the company has actively sold silicates ever since. The company has nine plants located around the country.

The nine Philadelphia Quartz Co., plants are located at Anderson, Ind.; Baltimore, Md.; Buffalo, N. Y.; Chester, Pa.; Jeffersonville, Ind.; Kansas City, Kan.; Rahway, N. J.; St. Louis, Mo.; Utica, Ill. An associated company, Philadelphia Quartz Company of Calif., operates plants at Berkeley and Los Angeles, Calif., and at Tacoma, Wash. Another associate is National Silicates Ltd. with producing units at Toronto, Ontario, and Valleyfield, Quebec.

Thomas W. Elkinton, chairman, is a great-grandson of the founder; his son, Thomas, is president of the firm. Other directors of the company are: William Martin, James A. Norton, Chester L. Baker, John C. Russell, Charles E. Ramsey, J. Morris Evans, Monroe J. Blanchard. General offices are located in the Public Ledger Building, Philadelphia 6, Pa.

Brick and Tile Die Firm Purchased

George E. Gussett has announced the purchase of The Louisville Machine Manufacturing Co., of Louisville, O. Under the new name, The Louisville Machine Manufacturing Corp., the new owner is undertaking an extensive program of modernization and expansion to furnish brick and tile dies, along with an expanded line of special equipment for the ceramic industries. The new facilities will assure prompt service to the industry of components made by the company since its organization in 1904.

In addition to its world wide reputation for quality dies, the company makes a wide assortment of texture devices, branding plates, rollers, brick and tile cutters and kiln dryer and transfer cars. Complete welding facilities, machine shop, and custom fabrication are available.

Corpening Joins Ferro

Alexander N. Corpening has joined the Clayware Dept. of the Ferro Corp., Color Division, Cleveland, O.

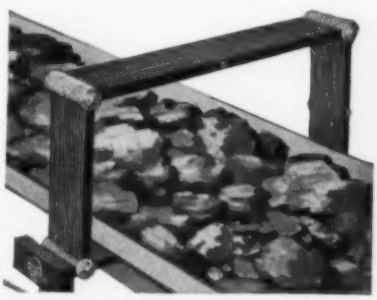
Tours Europe

Jules Parisi, Pekay Machine and Engineering Co., Chicago, Ill., has left for a 6 weeks business tour of Europe. He will be calling on refractory and brick plants while there.

Keep tramp metal from damaging costly hammermills ...with the RCA ELECTRONIC METAL DETECTOR

Manganese steel dipper teeth, drill bits, castings and broken machine parts that might cause damage to secondary crushers, and other critical equipment, are automatically discovered by the RCA Electronic Metal Detector. Designed for heavy-duty service, to withstand dust and moisture.

Easily installed on existing conveyors, this electronic detector is always on the job, probing out all kinds of tramp metal, both magnetic and non-magnetic which can cause downtime and repairs. Prevent tramp metal losses at once! Write to RCA, Dept. W-407, Building 15-1, Camden, N. J.



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RADIO CORPORATION OF AMERICA

Circle Service No. 50

General Refractories in Resumption of Operations

Expecting orders to rise with an anticipated rise in steel production, the General Refractories Co., Portsmouth, O., was planning to resume operations at the plant last month. The plant had been idle for several months. It normally employs 40 men. The company's silica mine at Minford, O., was also expected to resume operations at the same time. The mine employs four.

Kaiser to Build New Louisiana Alumina Plant

The Kaiser Aluminum and Chemical Corp., has announced a major facility at Baton Rouge, La., for the manufacture of tabular alumina. The addition to the existing plant will cost an estimated $750,000, it was reported.

Expansion Program at Globe Brick

The Globe Brick Co., East Liverpool, O., is completing the construction of a $500,000 modern grinding, screening, and storage plant at Newell, W. Va. The plant will provide positive control of crushed and ground clays for the production of wire cut and dry pressed ladle brick.

North American Elects Three Vice Presidents

The following changes in the management staff of North American Refractories Co., Cleveland, O., have been announced by President E. W. Valensi.

At the board of directors' meeting held recently W. R. Ramsay was elected to the post of first vice president. He was formerly vice president—administrative and has been connected with North American Refractories Company since June 1957. He also has been a Director of North American Refractories since 1955.

E. A. Williams, Jr., formerly manager of operations of the company, was elected vice president in charge of operations.

Frederic W. Schroeder, former director of research of the company, was elected vice president in charge of research.

Modernization Set at Dominion Fire Brick

Six of ten beehive kilns operated by the Dominion Fire Brick and Clay Products Ltd., at Claybank, Sask., have been converted to use natural gas. The first kiln using the new fuel was fired in November 1960. Prior to this, coal was used.

Elect Cashin President Of Kaiser Refractories

The election of Frank M. Cashin as president of the Refractories Division, Kaiser Aluminum & Chemical Corp., Oakland, Calif., has been announced by D. A. Rhoades, president of the corporation.

Cashin has been serving as vice president and general manager of the division.

The appointment is in recognition of the increasing size and importance of the refractories business within the corporation and the separateness of its operations from those of aluminum sales and production, Rhoades said.

Cashin became associated with the corporation in 1943 and in the following year opened the company's first eastern refractories sales office. He was named manager of the division in 1953 and a vice president in 1955. Mr. Cashin attended Columbia

Norton Offers Fused Mullite Shapes

Setting high purity alumina shapes in a periodic kiln. Floor and arch brick are Norton mullite as are the batts and saggers shown.

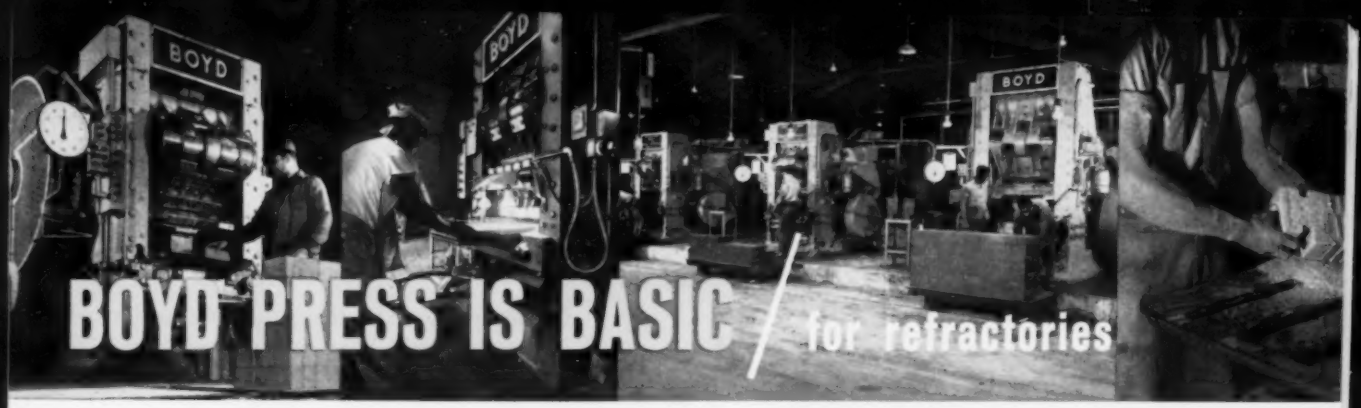
After a period of successful field testing, Norton Company's Refractories Div., Worcester, Mass., is now offering fused mullite refractories in a wide range of shapes for use as batts, saggers and kiln furniture.

The Norton process of fusing in the electric furnace produces a mullite ($3Al_2O_3 \cdot 2SiO_2$) which retains its high strength properties up to the melting point of mullite, 1840° C. (3340°F.). Its purity is believed to be the highest available.

The Norton mullite has excellent thermal shock resistance. Its high chemical purity contributes to good corrosion resistance. It has high hot strength with the ability to remain flat after repeated cyclings. Its maximum use temperature is in the vicinity of the melting point of mullite itself. It has excellent load bearing capacity.

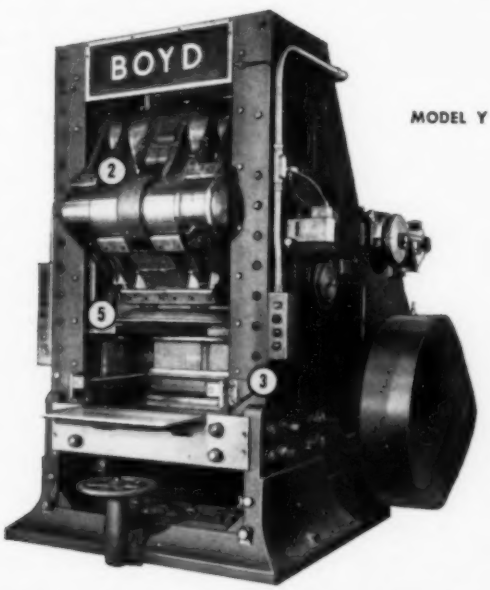
The fused mullite produced by Norton has a slight excess of alumina over the chemically theoretical formula. This reduces to a minimum the amount of "glass" that is often found in mullite and is the cause of deformation or failure under load.

Circle Service No. 51 ⟶



BOYD PRESS IS BASIC / for refractories

Meet increased customer demand for dense, stable low porosity brick with Extra Duty MODEL Y Press

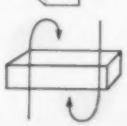


MODEL Y

These exclusive features help Model Y make the most of high compaction pressures:

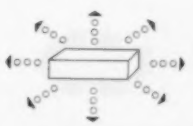
BOYDAMATIC

Easily operated control system provides full automatic operation—or selective combination of manual and semi-automatic controls over various press operations.



TOP 'N BOTTOM ACTION

Pressure is exerted upon both the top and bottom of brick in the mold—to reduce density variance to a minimum, insure better, more stable brick.



DE-AIRING PAUSE

Momentary pause in press operation allows air to escape before final compression stroke. You get dense, finely proportioned brick and reduce distortion in firing and use.

1 **NEW BEARINGS.** High speed shafts are fitted with sealed roller bearings; low speed shafts with renewable plastic inserts.

2 **STRONGER TOGGLES** are of all steel rib construction. Load bearing surface increased 100%. All bronze or steel bearing surfaces are replaceable.

3 **HEAVIER FRAMES.** Heavier journals and more ribbing increase stability and rigidity of the Boyd Press.

4 **ALLOYING,** heat treating and flame hardening make gears, crankshaft, side bars and crosshead tougher, longer wearing—smoother running.

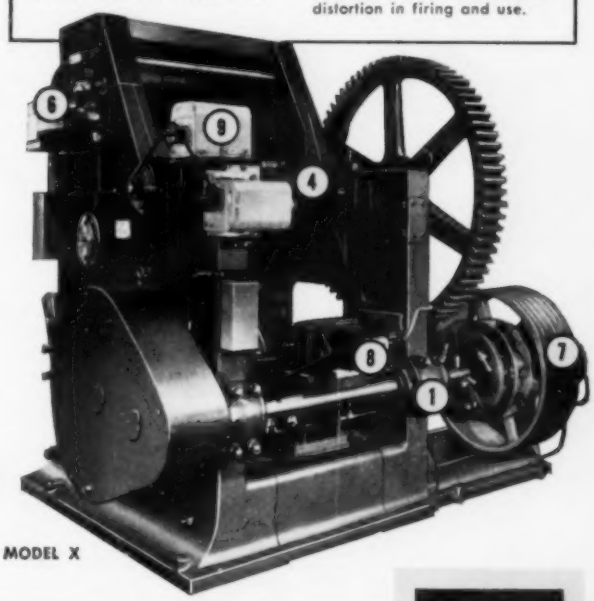
5 **END GRAIN FORMICA** used for frame wear plates. Is durable, smooth and easy to replace. Is non-"galling."

6 **AUTOMATIC FORCE-FEED LUBRICATION** is positive, thorough. Takes element of human error out of routine press maintenance.

7 **AIR OPERATED CLUTCH-BRAKE** gives instant response to *Boydamatic* controls. Is positive and trouble-free.

8 **AIR OR HYDRAULIC CHARGER** is completely flexible. Can be operated continuously with press cycle or controlled for single stroke by switch.

9. **"BRAINS"** for the new flexibility of the Boyd Press is found in this sequencing rotary cam limit switch.



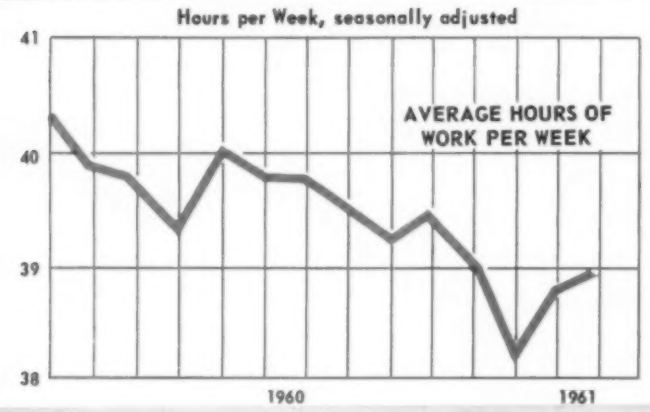
MODEL X

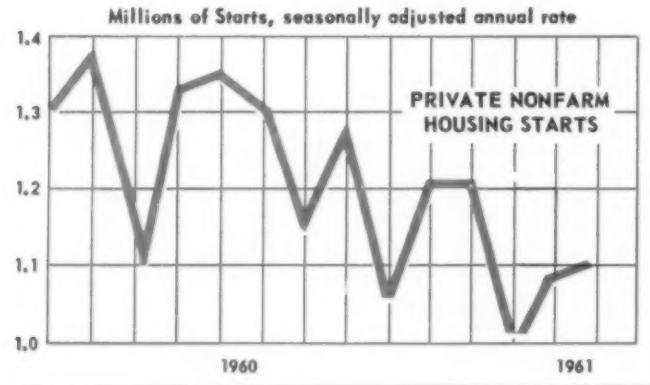
CHISHOLM, BOYD & WHITE COMPANY

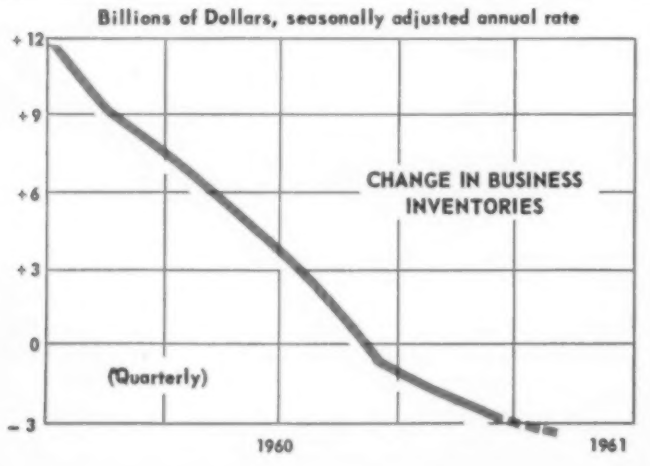
A SUBSIDIARY OF WEHR STEEL COMPANY

610 W. 57TH STREET • CHICAGO 21, ILLINOIS

BOYD
POWER
PRESS







By End of '61

Capacity Production!

There are indications that production of structural clay products will hit capacity levels before the end of 1961. Already the general economic upswing has affected production in this industry to the extent of a 21% increase since the low of last November.

The four basic charts on this page are all favorable with regard to the second half of 1961. Most significant is the increase in the hiring rate, which is accompanied by a lowering of unemployment. This means greater buying power.

The workers are working more, too, for the average number of hours worked per week has increased. That more money is in the hands of the workers is indicated by the increase in savings accounts. One banker was somewhat concerned that savings were growing faster than borrowings from his bank. He considered this a sign of conservatism and lack of confidence that times were really better. Until the rate of borrowing goes up he feels we will not be in the clear.

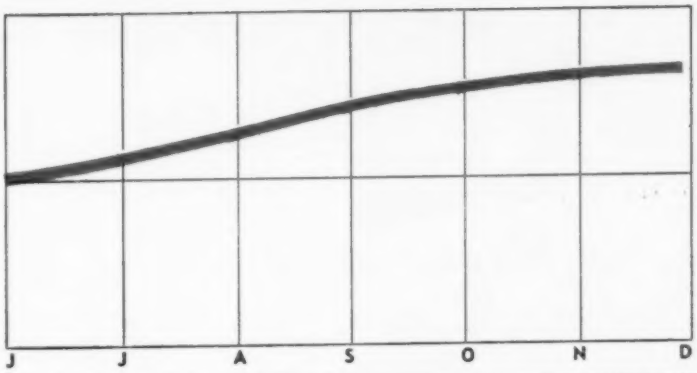
Inventories are still on the downtrend and according to some analysts the level has reached the danger point. Many industries must either level off or slightly increase inventories at this point.

The turn in private and nonfarm housing starts is most significant. Since structural clay products are largely dependent on housing construction, this is a real indicator. Recently, government prognosticators have increased their estimates for housing starts from 1.3 million to 1.5 million for the year.

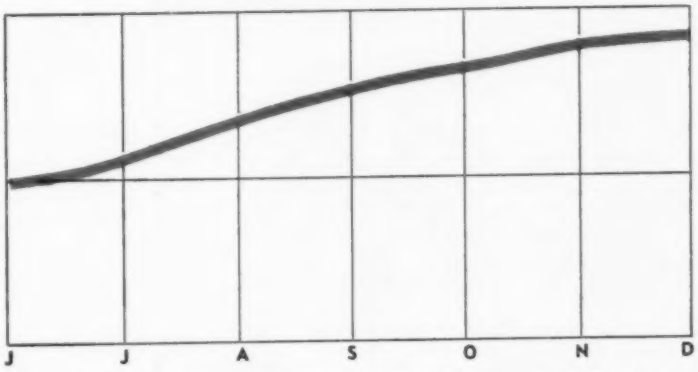
Nonresidential construction is maintaining its high levels of the past few years. Because automobile builders are still optimistic for a good year and because appliance manufacturers report sales increases at higher prices refractory production should advance.

It all adds up to a general increase in sales for structural clay products and the figure should be considerably higher for the last half of 1961.

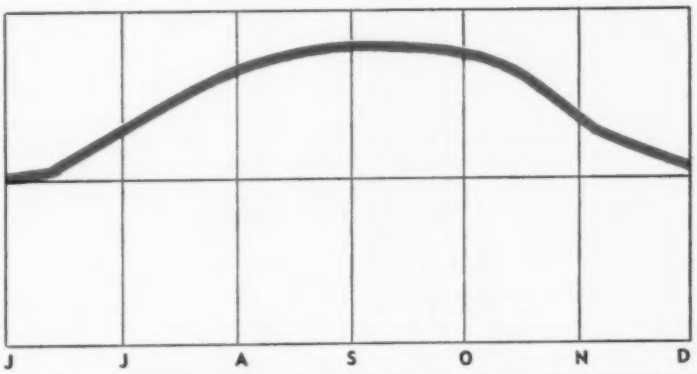
Brick & Tile—The steady rise in the economy will be partially due to the increase in construction. At least 1.3 million houses will be started and possibly as many as 1.5 million. This will create a demand for brick and tile right to the end of the year.



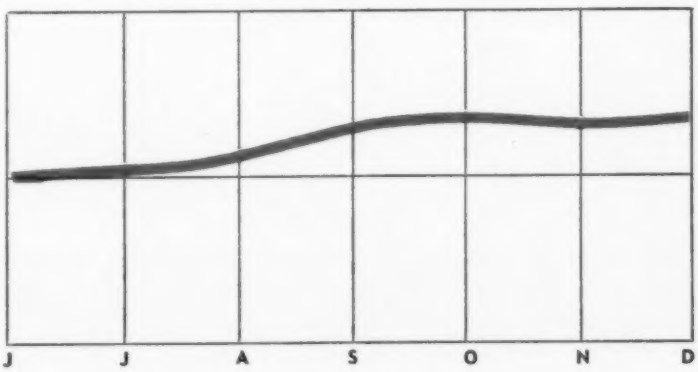
Refractories—Refractories suffered with the steel business and are regaining ground along with steel. Steel is slated to surpass 70% of capacity, which will mean almost full production for refractories. The other 50% of refractory users have been going fairly well and will continue to do so. The year's end should be the high.



Sewer Pipe—Unless large sums are voted by government to build badly needed waste disposal plants, business will continue in a sidewise movement. The summer will show a bulge in demand while working weather is good. Business at the end of the year should be about at May-June levels. Summer production should be at capacity.

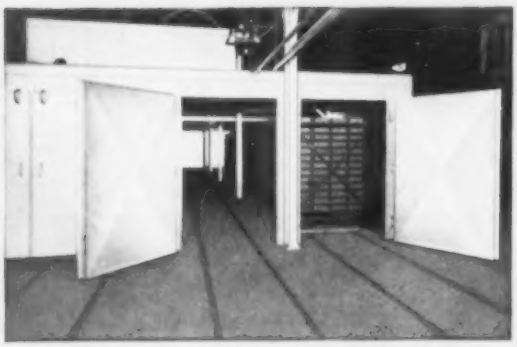


Aggregate—With more products demanding clay aggregate, the summer build-up should be permanently held and become part of an expansion in demand for products of this industry.



HEAVY CLAY DRYERS

...the product and problem dictate the design

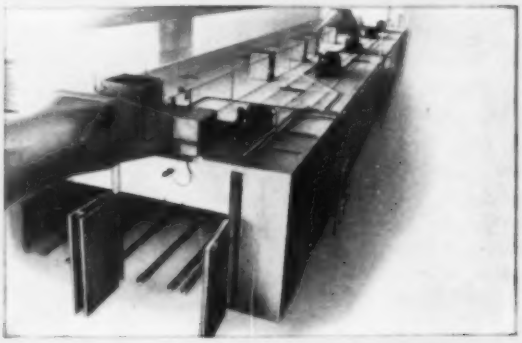


Car Type Humidity Controlled Fire Brick Dryer.

The LANLY Company's geographical location is near the heart of the country's clay products producing area. This has contributed to their 20 year acquisition of the essential knowledge and experience required to design and build the finest in heat processing equipment for the exacting varied applications in the industry.

Unprecedented competition, coupled with ever increasing costs has made it mandatory for clay products manufacturers to strengthen their relative positions in the field through the replacement of outmoded dryers. This has been accomplished in a large measure by their coordinated action with the LANLY organization.

Rack Type Humidity Controlled Refractory Dryer.



Progressive Type Humidity Controlled Quarry Tile Dryer.

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CERAMIC OVENS & DRYERS

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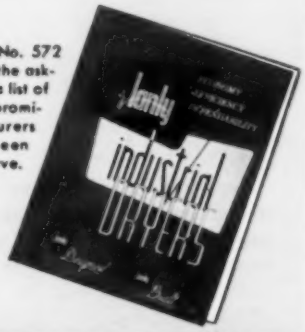
LANLY Bulletin No. 572 is available for the asking. It contains a list of some of the prominent manufacturers LANLY has been privileged to serve.



Atlanta, Georgia • Birmingham, Ala. • Boston, Mass. • Chicago, Ill. • Cleveland, Ohio
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Circle Service No. 52

Greater Acceptance

Basic Refractories Moving Up!

By FRANK CASHIN

President, Refractories Division, Kaiser Aluminum & Chemical Corp.

The past two decades have seen an enormous acceleration in the use of basic refractories. These products constitute the major growth segment of our industry. It is fairly easy to look back over these past years and see why basic refractories have gained such widespread acceptance, but it is quite a bit more difficult to project these growth curves in order to see exactly where you are going to be 10 years from now. We are nevertheless optimistic that the trend toward increasing use of these materials will continue over the next few years.

In one form or other basic refractories have been used by the steel industry as far back as the 1880's. And as the basic slag steel-making process continued to grow during the first half of the century, the consumption rate of basic refractories per ton of steel produced also began to increase.

Improvement in Properties

This rate of basic refractories usage has grown because of an enormous improvement in the properties of these refractories, making possible their use in a wider number of applications. Until comparatively recent times, the magnesia raw material used in the production of these products was magnesite. A major step in the improvement of basic refractories was the introduction of periclase, a higher purity magnesia, chemically synthesized from seawater and brines. This trend toward higher purity magnesia is continuing. And, as a result, basic refractories consumers are getting more mileage out of these products than ever before. Although improved refractories may have a higher initial cost, in the long run they make possible greater production and longer furnace life. It was particularly interesting to note that in 1959 during the prolonged strike when steel furnaces were shut down for as long as 17 weeks, the basic refractories used in these furnaces apparently showed few ill effects.

In the steel industry, basic refractories are used because of their ability to resist chemical attack and because they permit operation at higher temperatures. For extreme operating conditions, certain selected grades of magnesia are used. Chrome ore as well as other additives are introduced to reduce thermal conductivity and

Frank Cashin

increase spall resistance. High purity magnesia ramming mixes are used in nearly all open hearths, and gunning mixes of the same quality are used for maintenance.

The most exciting new development in the open hearth process is the increased use of oxygen requiring basic refractories in the roofs of these furnaces. This development has gained acceptance because operators are pushing existing furnaces for maximum production. The use of these refractories in open hearth roofs will result in upward consumption of basic refractories, at least during this transition period. Eventually, however, it is possible that when furnaces become balanced through longer roof life, the consumption of basic refractories in other portions of the furnace may decline. Accelerated development work is under way aimed at reaching the ultimate in a basic refractory roof brick.

Special types of refractories composed of deadburned dolomite and periclase have been developed for use in the basic oxygen steel-making processes. In spite of the fact that this is a relatively new method of steel making, the refractories industry has advanced rapidly in developing improved refractories for this use. Particular progress has been made in overcoming the tendency of these brick to hydrate during storage. It is likely that there will be a trend toward improved quality and longer life just as there has been in other refractory applications.

Uses in Glass Industry

The general practice in the glass industry currently incorporates the use of basic refractory materials from limited use to total application in the areas of the furnace generally considered not to be in contact with the molten glass.

Basic refractories are advantageous because of their higher thermal conductivity and heat capacity, and their resistance to alkaline and volatile carry-over from the furnace bath. For this reason, basic refractories have wide use in glass furnace regenerative systems including widespread use in port roofs and crowns.

In cement kilns, certain basic refractories have given a number of desirable characteristics for use in the hot zone areas. These are high refractoriness, basic chemical reaction, good strength at all stages, volume stability and ability to take a coating. The ability to take on a

(*Continued on page* 98)

Modernize at Low Cost with New

A new concept in firing clay products is being introduced into the structural clay products industry; the shuttle kiln. The editors of BRICK & CLAY RECORD have noticed increased number of shuttle kilns being built in this branch of the ceramic industry and are making a study of the possibilities of this method of firing. Shuttle kilns vary in sizes and resultant capacities, as do tunnel kilns, with several kiln builders making serious attempts to introduce shuttle kilns in the heavy clay products industry. In the months to follow, the editors will report on the other various types of shuttle kilns being built throughout the country.

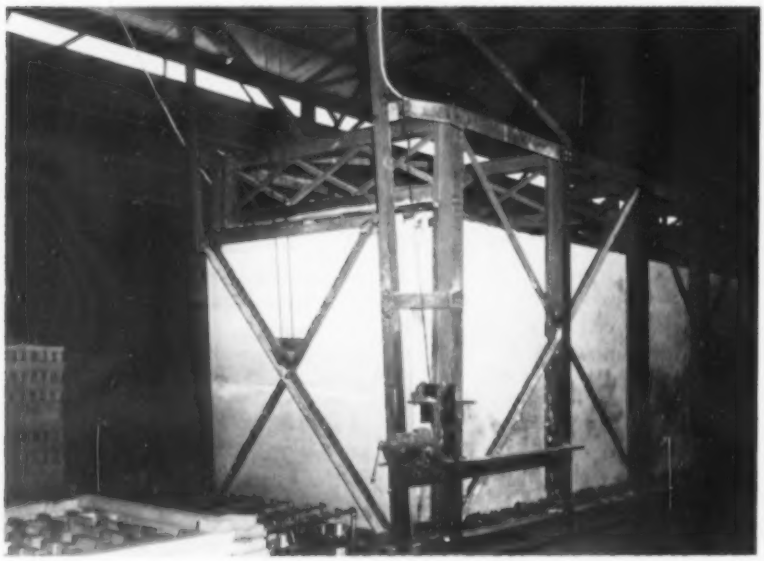
In the rapidly expanding and competitive southern brick market, it became apparent to W. D. Morrison, president of Hammond-Baton Rouge Brick Co., and Paul Gaston, secretary-treasurer of the company in Hammond, La., that scove kilns were becoming too expensive to operate and still remain competitive with a quality product.

Since the company was already operating one tunnel kiln, it was felt that the production of a second tunnel kiln would just provide too much capacity for the immediate market and a means was sought whereby the scove kiln production could be replaced with another method of burning the brick more efficiently while still providing a quality product.

After a long and extensive research of these methods, which involved looking into other phases of the ceramic industry, the company management investigated the possibility of burning brick in an envelope-type shuttle kiln, commonly used in the ceramic artware industry and quite well known in the structural clay products industry on the West Coast. It was determined that this type kiln could be used for profitably burning Louisiana clays and in March, 1961, a kiln of this type was completed and the first burn made.

The envelope-type shuttle kiln differs from a normal car-type shuttle kiln in that the hearth remains stationary and the envelope moves over the setting on the hearth. In the car type-kiln the enclosure remains stationary and the cars are introduced into the kiln and after burning the cars are removed for unloading. Two hearths are built for an envelope type kiln installation and the enclosure moved from one hearth to the other. An obvious advantage of this type construction is that the enclosure can be moved while it is still quite warm from one setting over the other so

The Advance envelope kiln is the first kiln of this type in the Deep South. It has a setting capacity of up to 22,000 brick and can be turned over three to four times per week.



One of the hearths of the kiln with the floor removed. Five rows of burners are visible; each row has 140 burners adding up to a total of 700 burners in the kiln.

Envelope Kiln

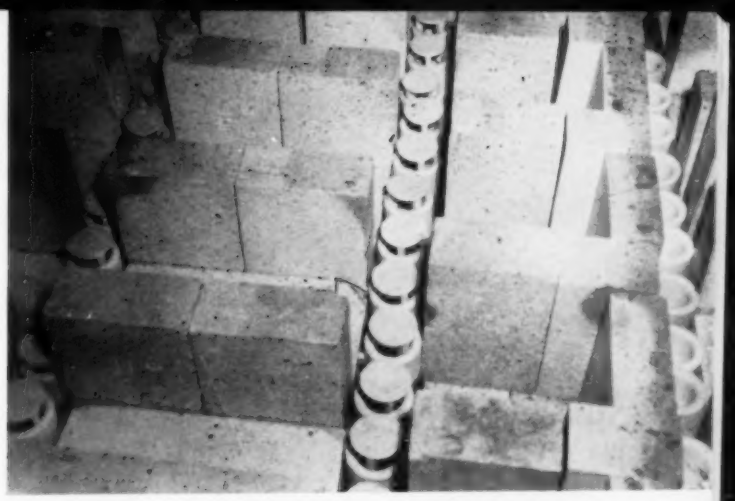
that the kiln walls themselves are almost always hot and little fuel is required to preheat the kiln.

The kiln at the Hammond-Baton Rouge Brick Co. was designed and built by the Advance Kiln Co. It was designed for package-setting both hearths with a fork lift truck setting.

Two types of brick are made at the company's operations just outside Hammond. Soft mud brick are made, as are stiff-mud wire cut. The wire-cut brick are burned exclusively in the tunnel kiln which the company operates. In the past the soft-mud brick were burned in the scove kilns and it is intended that this product now is to be burned in the new envelope kiln. The kiln is designed to hold a setting of 19,000 to 22,000 brick at one time. It has been found that the kiln can be turned three times a week when burning the soft-mud brick and four times a week when burning the stiff-mud wire cut brick.

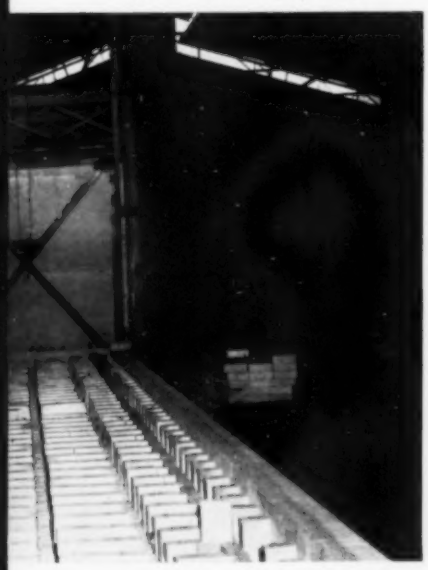
The kiln itself is nine feet wide and 42 feet long. The entire firing cycle is controlled by a program controller which, by altering the program, can be made to follow a definite

(*Continued on page* 96)

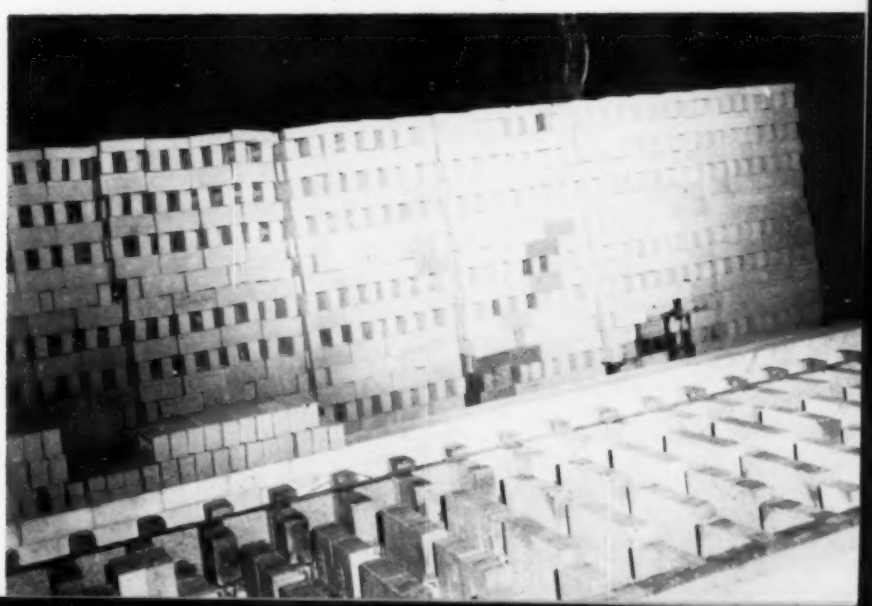


Close up of the burners which are located under a firebrick floor on the hearth of the kiln. The primary and secondary air is introduced with the fuel through these ceramic nozzle burners with a stainless-steel orifice.

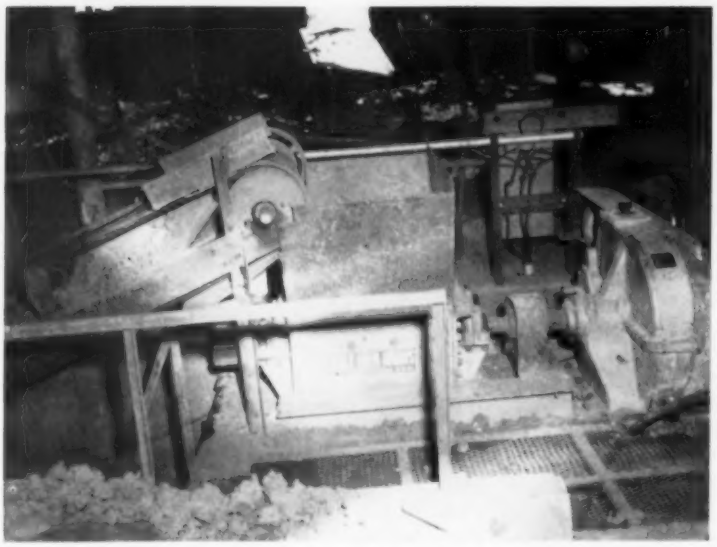
Above, each row of burners is fed from this gas manifold. Electrically operated solenoid valves are used to change the gas flow from one hearth to the other.



Below, view of the package setting used at the Hammond-Baton Rouge Brick Co. for the envelope kiln. The setting averages eight brick-wide and 20 brick-high, although with the flat crown in the kiln it is possible to set 24-high.



C. J. Gray, plant superintendent, and M. L. Wilder, one of the original employees of the Louisiana Lightweight Aggregate Co.



An Eagle Iron Works single roll crusher is the only primary crusher in the crushing circuit and provides the plant with its supply of wet clay for use in the rotary kilns.

Brick Plant Obsolete?

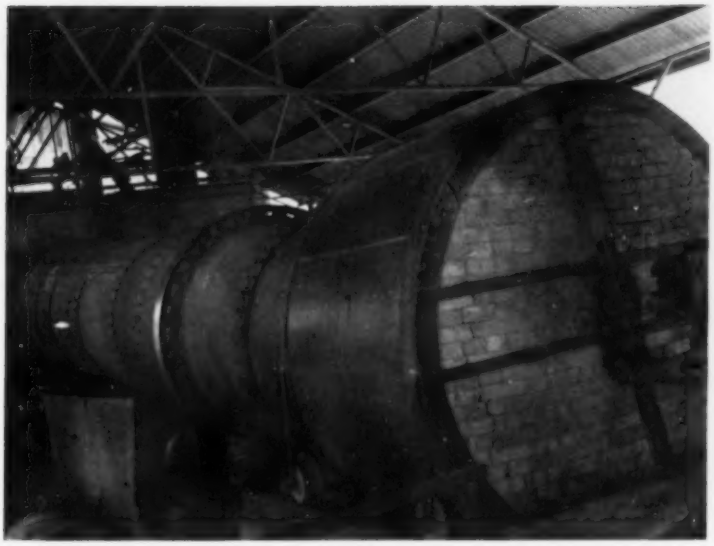
Convert It to Lightweight Aggregate Operation!

Here's a case of a brick plant that burned down in 1945 and the owners retired. The plant was never rebuilt for the manufacture of brick, but the area's clay supply and the market potential for aggregate could not be overlooked and the result was the Louisiana Lightweight Aggregate Co. on the same site. The business clicked from the start. Read the whole story on these pages.

When the old Rapides Brick Co. in Alexandria, La., known to everyone in the area as the Adam's Brickyard, burned to the ground in 1945, the owners of the plant decided that this was the proper time to retire. Consequently, the plant was never rebuilt as a brick yard. But here was one of Louisiana's prime locations for clay and a good market prevailed in the area for construction materials, more specifically aggregate of some sort, and tests were performed on the clay to test the bloating characteristics.

There never was too much doubt in anyone's mind about the bloating characteristics of the clay, since the former owners of the brick yard had already determined this in the manufacture of brick. Instead of shrinkage as most clays normally do when heated, this Alexandria clay has a very strong and specific tendency to expand. Because of this characteristic, the idea for the construction of a lightweight aggregate plant arose and today at the location of the former Adam's Brickyard stands Louisiana's only haydite manufacturing plant. A wholly-owned subsidiary of Texas Industries, Inc., with offices in Dallas, Tex., the Louisiana Lightweight Aggregate Co. was successful from the time the first product came from the kiln. Tests on the first expanded clay aggregate proved that the aggregate more than passed all ASTM specifications, and from this time, back in April of 1948, essentially the same product is produced as when the plant was started.

Because of the excellent bloating characteristics of the clay, the plant uses two of the shortest kilns in the lightweight aggregate industry, each of them being only 40 ft. long. The already fine bloating features of this clay are helped considerably when the clay is burned with a slight amount of moisture in it, since the moisture when transformed into steam, and trying to escape as fast as it can, helps form the expanded particles.



One of the two short rotary kilns in use at the Alexandria plant. The kilns are five feet in diameter and only 40 feet long.

The aggregate is crushed and ground and sized as the orders come into the plant. Car and truck loading facilities are provided right at the grinding plant shown in this photograph.

Both of these short kilns have a capacity of three and a half yards of aggregate per hour, making the capacity of the entire plant 7 yards of aggregate per hour.

A minimum of personnel are employed by the company. Running the plant 24 hours a day, only eleven men are required for the entire operation which includes supervisory personnel as well as office personnel.

Clay is mined about five miles from the plant site on the banks of the Red River in Alexandria. A drag line is used by a contract excavator. Contract haulers are used to haul the clay from the clay pit to the plant site. Because of the capacity of the plant, it has been found much more economical and convenient to rely upon outside contractors to secure the clay for the operation of the plant.

As the clay is received from the pit, it is either put into storage or fed directly into a hopper for processing in the plant. The covered storage area is capable of holding enough material so that mining operations are necessary for only three months of the year.

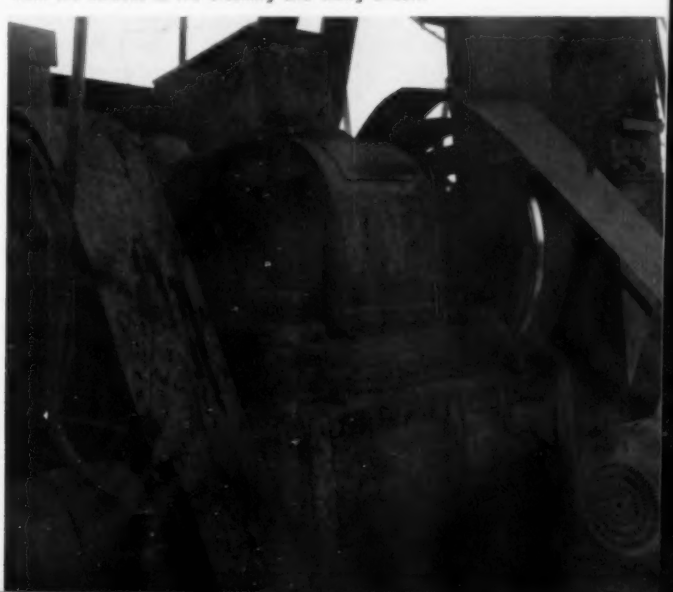
During the time of the year that clay is not mined, but taken from the clay storage shed, an International-Pratt dozer feeds the material into the hopper for processing. An Eagle Iron Works double roll crusher is used for primary crushing of the normally wet clay. A conveyor under this double-roll crusher delivers material to a stockpile of crushed material, under which is located a belt feeder for uniform feeding of clay to the kilns. This belt feeder delivers material directly to bucket elevators lifting the prepared clay directly to the feed end of the kilns.

As mentioned above, two rotary kilns are used to bloat the material. Each kiln is five-feet in diameter and

(Continued on page 73)

A Sauerman drag scraper handles the aggregate from the discharge of the kilns to storage, and then from storage to grinding.

A Webb City roll crusher is used to reduce the oversize aggregate from the screens in the crushing and sizing circuit.

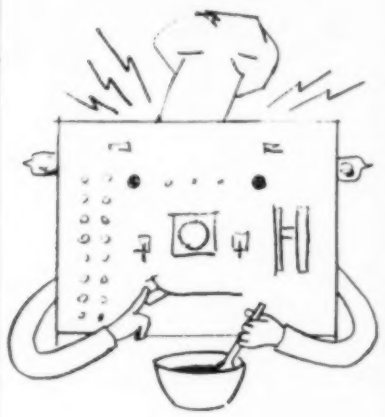


Geared to Space Age

Grinding Wheels Precision Made To Your Specs

Electronic device precisely measures and mixes the dozens of ingredients needed to make grinding wheels to each customer's specific needs. Manufacturer states that these wheels are made with the same precision as the metals and ceramics they are designed to cut.

New "Electronic Mixmaster" prepares better batter for grinding wheel industry...



A major step ahead in the grinding wheel industry was taken at Westboro, Mass., recently when Bay State Abrasive Products Co. placed into operation a new electronic "pushbutton mixmaster" which precisely measures and mixes the dozens of ingredients needed to make grinding wheels to each customer's specific needs. The new system speeds up mixing operations while assuring near perfect "recipes."

Bay State President Arthur E. Gilman in reviewing the new machine pointed out that: "Grinding wheels must be manufactured with the same precision as the Space Age metals and ceramics they will cut."

Complete Control

Installation of the automatic measuring and mixing system at Bay State moved the company another step toward complete electronic control over grinding wheel quality and production. The company, using the latest computers available for this type of work, was one of the first to adopt electronic calculation of grinding wheel formulas. The system permits ingredients to be determined to a millionth of a pound accuracy.

According to President Gilman, the "pushbutton mixmaster" also speeds production because it can handle with equal facility orders for one small wheel or a large quantity run.

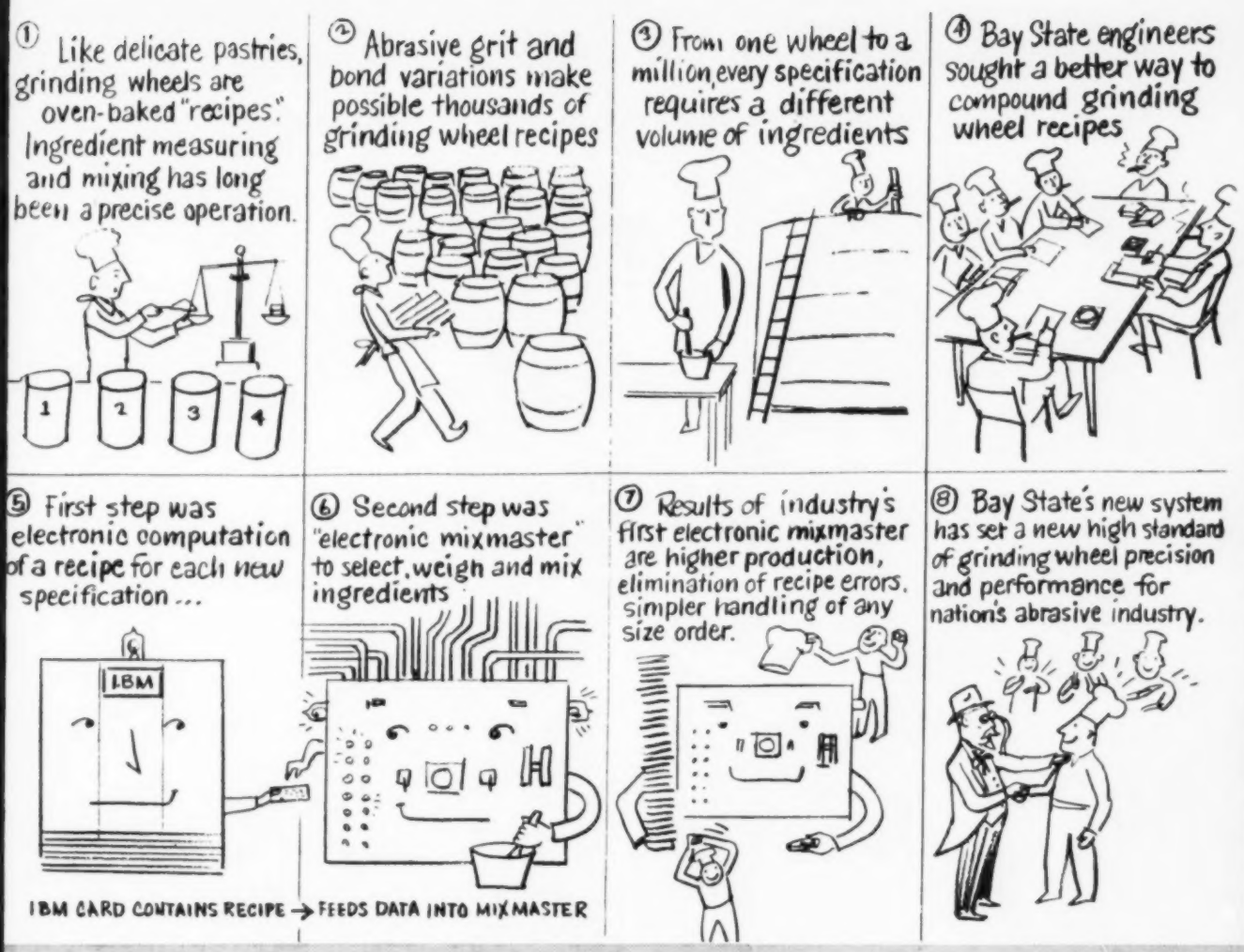
Successful Combinations

New metals and ceramics being created for high-temperature Space Age use are constantly challenging machine tool and abrasive products manufacturers. These challenges are being successfully met with new abrasive types and combinations, greater heat resistant bonds, and greater machine and wheel speeds. Bay State's new automated systems place it a step ahead in the grinding wheel industry.

To determine the exact formula for each wheel specification, it is necessary to take five basic elements into consideration . . . abrasive type; size; wheel hardness or grade; structure or concentration of abrasive grains, and the bond: Vitrified, resinoid, etc. These elements are affected by over 150 variables, and just a slight change in any one variable produces a totally new wheel with different grinding qualities. Obviously, thousands of combinations are possible—combinations that are the abrasive specialist's "tools" when he sets out to specify an abrasive wheel.

Creating Formula

The first step in making a grinding wheel is creating a formula. Since each wheel must be exactly right for the customer's grinding application, the wheel specifications are carefully determined in the customer's plant by a Bay State Abrasive specialist. This expert studies the speed and feed of the machine tool employed. He notes the material to be cut and the type of surface desired on the finished work. As each of these—and other problems—are solved, the formula begins to take shape. The specifications are sent to Bay State, and the final manufacturing formula is calculated.


① Like delicate pastries, grinding wheels are oven-baked "recipes." Ingredient measuring and mixing has long been a precise operation.
1
2
3
4
② Abrasive grit and bond variations make possible thousands of grinding wheel recipes
③ From one wheel to a million, every specification requires a different volume of ingredients
④ Bay State engineers sought a better way to compound grinding wheel recipes
⑤ First step was electronic computation of a recipe for each new specification ...
IBM
⑥ Second step was "electronic mixmaster" to select, weigh and mix ingredients
IBM CARD CONTAINS RECIPE → FEEDS DATA INTO MIXMASTER
⑦ Results of industry's first electronic mixmaster are higher production, elimination of recipe errors, simpler handling of any size order.
⑧ Bay State's new system has set a new high standard of grinding wheel precision and performance for nation's abrasive industry.

When completed, the prescription is fed into an IBM computer, where it is permanently stored on punch cards. When a repeat order for that particular satisfactory grinding wheel is received, an operator feeds the card into the computer which calculates the correct volume of ingredients to fill the order. A second card, punched with this information, is used to activate the mixmaster. The automated processes eliminate any possibility of human error and assure that grinding wheel performance will accurately match specifications.

When the order card is inserted into the mixmaster, electronic impulses in the giant machine select and weigh the ingredients from huge storage bins above. The precise volume of each ingredient is gravity fed down through a system of pipes to the container in which the order is being prepared.

Since abrasive products come in a wide variety of sizes and shapes, depending on their use, the order goes to heavy hydraulic presses where the mix is molded into the required shapes. There are molds for each wheel size.

After formation, they are taken to drying ovens where they are partially cured. Then they go to special high-temperature kilns and are fired at temperatures as high as 2300°F.

Undergo Rigid Tests

Since grinding wheel operations require high-precision work, the wheels must undergo various rigid tests before they leave the factory. These tests give assurance that the wheels meet all established Bay State standards for shape, size, weight, balance and roundness. A reflectoscope, for instance, is used for detecting internal seams in the more dense wheels, such as Bay State's hot press resinoid bonded snagging wheels that are used in steel mills. This instrument sends high frequency sound waves into the wheel and records those flaws which interrupt the sound waves. Other checks are for truth and balance. All wheels six inches in diameter and over are spin-tested at speeds greater than those recommended for customer use. This test permits Bay State to certify the safety of its wheels.

Final step in the manufacturing process is the application of the Bay State stencil or wheel blotter to exactly identify each wheel. The wheels, which range in price from a few pennies to diamond-grit wheels at thousands of dollars each, are then carefully packaged for shipment.

(For story in pictures turn page)

Picture Story

Produce Grinding Wheels Automatically

CUSTOMER'S GRINDING PROBLEM, in this instance the finishing of flat ground stock, is studied by a Bay State engineer who recommends new-formula wheel for hard surface work.

CUSTOMER'S WHEEL FORMULA is permanently stored on this IBM card. When an order comes in for a quantity of this type wheel, card is fed into computer which determines volume of each ingredient needed to fill order. Order card is sent to factory.

AUTOMATED STORAGE AREA for abrasives is located above mixer. Electronic signals release ingredients to be weighed and conveyed back to factory below.

"MIXMASTER" CONTROL CENTER receives order card which automatically selects, weighs and conveys ingredients from storage area above down into mixing units. After mixing, ingredients are protected in dustproof containers until formed into wheels.

(right). READY FOR FORMING into wheels by hydraulic presses, these plastic-protected orders move down conveyor belts.

"BIG SQUEEZE" of press forms grinding wheel into exact-sized mold. Uncured wheels are handled very carefully to prevent edge damage.

HEAT CURING of grinding wheels removes excess moisture before high temperature fusing in kiln.

MULTIPLE TESTS assure that wheel is correct in shape, size, weight, balance, roundness. Hidden internal flaws are located (above) with this test. Reflected sound wave is distorted by invisible internal cracks that may exist.

CAREFUL PACKING of wheel insures protection during shipment to customer.

A TRUTH TEST is made by hand on every wheel, some of which can be seen on conveyors that connect all departments of Bay State plant. Craftsmen continue in key roles in automated factory.

ORGANIC BINDERS

GLUTRIN

(liquid)

or

GOULAC

(powder)

Especially suitable for increasing the molding and dry strength of

- **BRICK**
- **CLAY REFRACTORIES**
- **NON-CLAY REFRACTORIES**
- **SILICA REFRACTORIES**
- **REFRACTORY CEMENTS**
- **PLASTIC REFRACTORIES**
- **TERRA COTTA**
- **STRUCTURAL TILE**
- **SEWER PIPE**
- **SAGGERS**
- **FLUE LINING**

Small amounts required—easy to use. Economical and larger production of first quality product absorbs the investment many times.

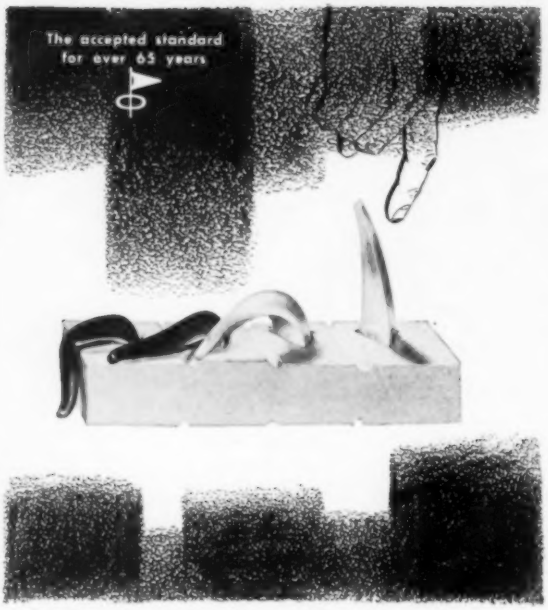
Many successful users. We'll be glad to submit samples and our suggestion on procedures and amount needed.

Robeson Process Company

P.O. Box 960 • Erie, Pa.

Plant - Johnsonburg, Pa.

Circle Service No. 53



Reliability...

ORTON CONES

Any measuring device must be accurate with known standards, and that's what can be said for Orton Standard Pyrometric Cones.

Not only are the cones themselves uniform in performance day after day and year after year, but you can rely on the Orton Foundation to supply a cone that specifically fills your need . . . regardless of the temperature range in which you work.

Orton Cones can also be relied upon for checking the accuracy of ordinary measuring devices. If you are not fully utilizing this economical, efficient and reliable method of firing control, investigate the potential of Orton Cones at once, for you'll find the proper use of cones will point the way to better firing and more uniform ware.

Request the newly revised edition of "The Properties and Uses of Pyrometric Cones."

Foreign Sales: **International Division, The Ferro Corporation, 4150 E. 56th St., Cleveland, Ohio, or the Foundation**

the firing insurance of thousands

The Edward ORTON Jr. Ceramic FOUNDATION

1445 Summit St., Columbus 1, Ohio, AXminster 9-8023

Circle Service No. 54

Convert . . .

(*Continued from page 67*)

only 40-feet long. Temperatures ranging from 1850° to 2100° F. are attained in the discharge end of the kilns, depending upon the moisture content of the clay at the time it is processed. Manually operated high-pressure gas burners are used in the firing process to bloat the clays and provide the company with 7 yards of expanded clay every hour.

Direct Discharge

Hot clinker from the rotary kilns is discharged directly onto a chain drag type conveyor which conveys the clinker to a clinker stockpile. No artificial cooling of the clinker is provided for the material, since an adequate clinker stockpile is maintained to allow natural cooling.

A Sauerman drag scraper operated from a central control house is used to start the process of handling the finished aggregate. This scraper delivers material to a Syntron vibrating feeder feeding a seven-foot International dry pan for primary crushing. A bucket elevator raises the ground aggregate from the dry pan to a Universal double-deck screen which separates the aggregate into the minus 3/8-in. and plus 3/16-in. fractions.

One interesting point to note in the grinding operation is that the aggregate is crushed and ground as orders are received for the material. With a crushing capacity of 30 yards per hour for the crushing circuit, it is felt that better service can be given the customer by custom grinding the aggregate to the customer's specifications. Because of this, no finished aggregate stocks are maintained, as is common in other aggregate plants.

Oversize Reground

Oversize from the screens is sent to either of two secondary grinding machines, a Jeffrey Hammermill or a Webb City roll crusher. The rolls are used only for material requiring a maximum amount of minus 3/8-in. material. The rolls are set to provide a maximum amount of this material so that no further screening of the aggregate is necessary.

80% of all the aggregate produced at the Alexandria plant is shipped by rail to the company's customers. The company is located on a siding of the Texas-Pacific Railroad which runs as far south as New Orleans and into East Texas. The actual market area for the company is within a 100-mile radius of Alexandria, shipping as far north as Shreveport.

Majority to Block Plants

The majority of the aggregate is shipped to block plants although the shipments to the structural concrete suppliers are on the increase. Natural aggregates in the State of Louisiana are getting more scarce all the time, and trials have been made by the State in the use of expanded clay aggregate in bridge decking, asphalt aggregate in bridge decking, asphalt paving and prestressed concrete. Trials so far have been very successful and clay aggregate in bridge decking is already being decided on by the state.

L. D. Fain, vice president of Texas Industries, Inc., is also general manager of the Alexandria operations. He is assisted by M. L. Wilder, who was with the Louisiana plant when they started making aggregate, and C. J. Gray, plant superintendent.

new markets! new profits!

with "hand dressed"

BRICK

by **PITCHMASTER**

NEW AND REVOLUTIONARY IN DESIGN! TESTED AND PROVEN

Here is a machine that incorporates the skills of the craftsman with more production muscle than twenty men.

Reach NEW markets, NEW profits by offering a NEW brick with greater depth of beauty.

- Culled brick can be converted to premium priced material.
- Fifty lineal feet of "Hand-Dressed" brick per minute.
- Instant adjustment to material height and depth of pitch. No limitation on material length.
- All material is conveyed through machine in a continuous flow by belts and rollers. Machine maintenance is reduced to the absolute minimum.

No other comparable machine in the field today will match the productivity and dollar profit that PITCHMASTER affords to make it a common sense investment.

Names of satisfied users furnished on request

$4000.00
F.O.B. FRANKFORT, INDIANA

E & R MFG. CO. INC.
FRANKFORT, INDIANA

Circle Service No. 55

Baloney and Brick

Region 4, SCPI, Embarks on Special Advertising and Promotion Campaign

At the recent meeting of Region 4, SCPI, held in Canton, O., James Platt, regional director, told more than 200 brick and tile dealers, mason contractors and builders about a new advertising and promotion campaign that his organization was starting (See March, 1961, BRICK & CLAY RECORD). Most of the material is now ready and merchandising kits have been sent to all the dealers in Platt's area. In presenting this report on how Region 4 is promoting the use of clay products in its area, the editors of BRICK & CLAY RECORD thought it would be of interest to the readers to note how one area is going "all-out" to promote the use of brick and tile.

When Region 4, SCPI, created their special advertising and promotion program, the thinking was based on the fact that too often in the past the material which was offered to dealers, no matter how excellent it might be, was not used because they were asked to purchase it. It was felt that the merchandising ideas had to be changed the same way that production ideas had to be changed to become more up to date. It was also felt that direct consumer advertising was badly needed by the industry and that someone had to take the lead in developing this type of promotion before dealers, mason contractors and local unions could be expected to do much promotion on the local level.

To reach this consumer market, it was decided that the best approach was through a national consumer magazine such as *Look*, *Saturday Evening Post*, *Life*, etc.

Selecting the Media

The first step in the campaign was to find which magazines took advertising on a regional basis. Among those that did was *Look* and this particular magazine was picked because of its large circulation, the fact that it was a semimonthly publication, and the fact that it aimed its editorial appeal at the age group most interested in home buying.

In attempting to figure the type of ad which might be run, limited of course by the budget, it was decided that it should be editorial in nature, as there was a definite story to be told, one that could be told only with copy. The idea was then hit upon to run an ad similar to the regular editorial feature run in the magazine called "For Women Only." In the ads which are running, the sponsors are trying to use headlines which will draw the readers' interest and which will cause them to read the entire text.

The first ad "Baloney and Brick," was written specifically to discredit the age-old saying, "I can't afford a brick home." The second ad, "4 Ways to Save Money," is a further expansion of the theme of low maintenance, low insurance, high resale value, high prestige, etc. The third insertion will consist of the ad "Baloney and Brick," while the fourth will be based on the headline, "For People Who Want to Live Better." Photographs were also included in these ads to draw the interest of the reader.

Ads for Consumer

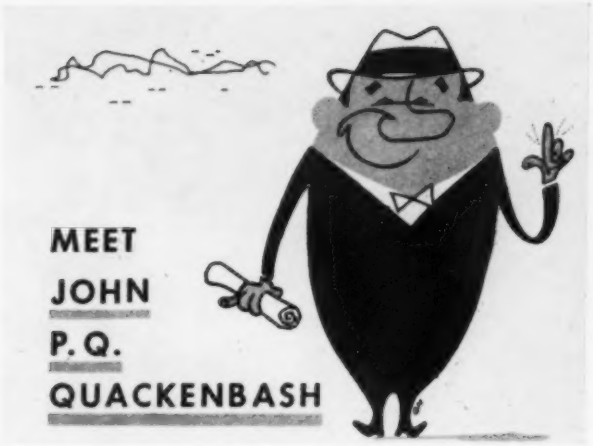
It is interesting to note that in some of the ads, a brick home is not even shown. It was felt that this was unnecessary. The ads were designed for the consumer. In other words, the industry is not advertising to itself, but to the general public.

The architectural advertising is based around the theme that an architect, in designing any building, must create a "feeling." For example, in a church he would attempt to create a feeling of reverence. Each of the 4-color advertisements to the architects therefore is carrying the headline, "A Feeling of . . . . ."

In the ad illustrated, which is the first of a series, "A Feeling of Enlightenment" is used to connote the college building shown in the photograph. Each ad also has art work

showing a set of hands depicting this particular feeling. Another ad in the series shows a set of clasped hands with the headline, "A Feeling of Reverence," while a third in the series shows a pair of hands with a hypodermic needle and the headline, "A Feeling of Confidence."

The builder advertising will play up the idea that brick does only one thing for a builder—helps him sell his homes—and also shows him examples from the organization's builder idea pieces. These builder idea booklets are being produced every two or three months and are devoted to ideas which the builder can incorporate into his own homes to make them sell more readily. The dealers are supplying these booklets,



whenever they are produced, to their local builders along with the merchandising material.

The merchandising material includes a counter card, easel type reprints of *Look* ads, ¼ page size *Look* covers with the "4 Ways To Make Money" ad on the inside pages, (the back page left free for the builder's stamp or imprint), window streamers, model home directional signs and an identification card which the builder can put in his pocket. The booklet, "Meet John P. Q. Quackenbash," has also been produced, a humorous type booklet aimed at the consumer and which can be used at home shows, as an envelope stuffer or as a general giveaway piece.

This promotional and advertising package is also being used as a basis upon which to sell dealers, mason contractors and unions, the idea of local advertising and promotional programs. The services of SCPI consultants are also being offered to help them prepare and run these local programs. These programs may run the gauntlet from TV, newspapers, radio and billboards to a direct mail campaign. It is felt that no matter how small the program might be to start, it is going a long way toward changing the industry's established pattern of promotion and advertising and is the first step toward getting complete industry cooperation and coordination in selling the merits of structural clay products.

Heartening Results

The results so far have been heartening. Platt is already beginning to receive a great deal of cooperation on a local basis from unions, mason contractors and dealers for supplemental promotions in their areas. In some communities radio, TV or newspapers have already been utilized, and in one community, all three have been effectively used. A report will be issued in the near future on several programs which look like they will get in full swing and more than justify the faith of Region 4 manufacturers in their investment of funds in this special program.

4
WAYS TO
SAVE
MONEY
stop painting the outside of your home—Elimination of painting can save a great deal of money, time, work and worry. There is, of course, the distinct possibility that your neighbors might become upset with you for not painting and thus creating an eyesore on their street . . . unless your home is BRICK. Brick never needs to be painted . . . a savings of dollars and dollars and dollars.
quit paying high heating bills—You can do this by turning down the thermostat and wearing your overcoat in the house, or by owning a BRICK home. Brick cuts heating costs season after season regardless of the size home you live in.
reduce your insurance rates — Unfortunately insurance rates cannot be reduced by exercises or magic formulas. BRICK, however, guarantees savings by providing lower insurance rates due to its fire and weather protection . . . savings that are continuous through the years.
cut repair and replacement expense. Forget all about the bothersome and costly "fix-it chores" that go hand in hand with less durable materials. Brick walls don't even have to be washed down every few weeks. Bikes, baseballs, and even hailstones won't dent brick walls, thus eliminating the worry of costly repairs and replacements.
BEAUTY-ECONOMY PERMANENCE
brick homes offer one of the few opportunities available to save money and yet enjoy added prestige, pride of ownership and higher resale value. For a FREE BOOK "Meet Mr. John P. Q. Quackenbash" . . . suggesting "things to look for in buying or building a home" . . . write the sponsors of this message: Structural Clay Products Institute—Region 4, 2554 Cleerview Ave. N.W., Canton 8, Ohio.

With New Machine:

Package 100 Brick Every 19 Seconds

After packaging several million brick with this machine, production figures indicate that a labor saving of 20% per hacker can be derived and a savings per crew of 10% based on the total brick packaged. In addition, the tighter pack obtained from machine packaging minimizes the amount of brick chippage formerly produced during handling and transport.

An automatic machine designed to package up to 100 brick per pack every 19 seconds has been installed at Columbia Brick & Tile Co., Columbia, S. C., by Signode Steel Strapping Co., Chicago, and Manufacturturers Equipment Co., Dayton. The Signode-MECO machine has increased productivity of each individual hacker by 20% with a net savings per packaging crew of 10% based on total brick packaged.

Three Basic Components

The Signode-MECO brick packaging machine consists generally of three basic components: (1) a series of carrier stacking jigs suspended from a monorail conveyor, (2) a strapping station in which the brick packs are accumulated, pneumatically compressed into a tight mass, and strapped into convenient-sized units, and (3) a powered roller conveyor which separates the brick into multipacks for pickup by a fork truck.

The machine is located on a ramp between two sets of storage tracks upon which the kiln cars are spotted at night or over the weekend. An offset was designed into the machine so that a minimum of reaching would be required to hack the brick. Thus, four jigs are located approximately two feet inward from a full car, while further down the length of the machine, four jigs are located as close to the outside of the kiln car as is possible without contacting the brick as they pass by. These latter jigs are stacked with brick obtained from the outside half of the kiln cars after the inner half has been hacked.

Six men constitute a full hacking crew on the machine and the job of each has been so defined that the work load is equally divided among the six. The second and fifth men are required to add dunnage material to the unit so they stack fewer brick than the other four. However, by rotating the men every 30 minutes, each man will work at every position during the course of eight hours.

Accommodate All Types

The stacking jigs have been designed to accommodate every type of brick that is produced in the plant. Each bar on the back is spaced to permit the arms on the pusher to contact two courses of brick and they are covered with a composition rubber material to minimize chipping during stacking. A movable spacer has been incorporated to facilitate stacking of various width packs. Two threaded knobs on each spacer permit quick adjustment when a unit of different size is to be stacked.

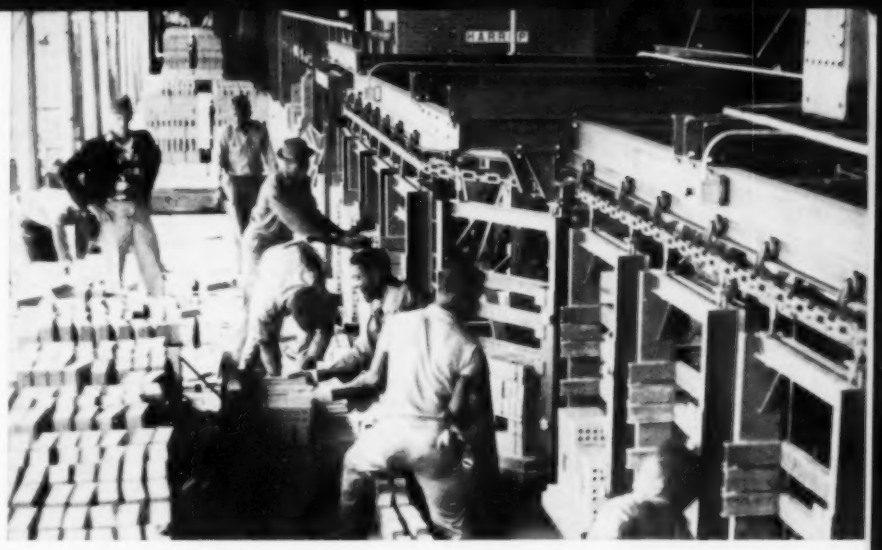
The jigs have been leveled and the height adjusted so that the bottom of the brick pack will be level with the top of the roller conveyor on the strapping station. Should misalignment occur due to an accumulation of wear on the various surfaces, provision has been made to compensate for it by adjusting the nuts on the jig supports until proper alignment is obtained.

The jigs are indexed at intervals determined by the setting of an automatic timer. For straight run brick with no blending, the time cycle has been set at 19 seconds, while for blending operations it can be increased to any time interval desired. The time cycle can be reduced to shorter intervals than the 19 seconds by adjusting flow control valves in the hydraulic circuit; however, with a 6-man hacking crew, the 19-second interval appears to be the minimum time in which the machine can operate producing the 100-pack without causing unfinished jigs to be indexed past the strapping station.

Push Brick

As a completed jig stops in front of the entrance to the strapping station, a limit switch is tripped causing a piston to motivate a pusher carriage. This device has arms that will pass through the backs of the jigs to push the brick onto the roller conveyor of the strapping station. The brick units are pushed by subsequent brick, so that eventually its centerline will coincide with the centerline of the strap chute. At this point the side compression machine is activated and compresses the brick into a more compact unit.

To obtain package tightness without requiring the tensioning of the strap to accomplish it, a cluster of four cylinders is provided that will exert pressure on the unit of brick



Six men are used at Columbia Brick & Tile Co. to hack the 100-brick packs. The brick are taken directly from the kiln car and stacked in the jigs as shown in this photo. Another line of kiln cars is on the other side of the machine and when the stackers are through with this side, they will move to the other side.

immediately before strapping. These pneumatic cylinders operate pusher bar holders that have been designed to distribute the compressive forces as needed along the height of the brick pack. To compensate for the uneveness of the brick, articulated pusher bars have been provided.

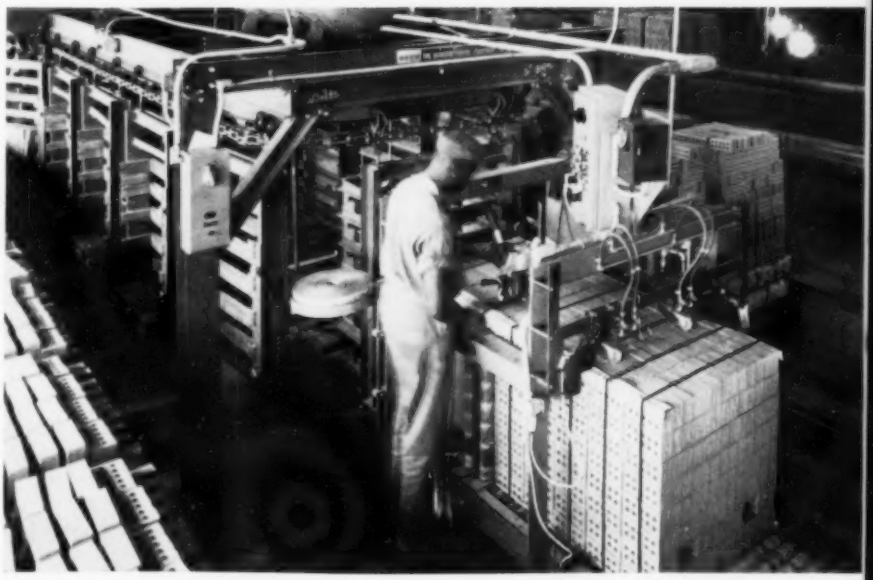
An operating pressure of 135 psi can be maintained without causing the brick to be chipped or broken during compression. The side compression is applied automatically when the pusher has reached its extended position. However, the operator must release it by pushing a button on the control panel. This is a safety feature to prevent the pusher from pushing another stack of brick into the machine before the strapping operation has been completed. Manual control of the side compression cylinders has also been provided.

Apply Protection

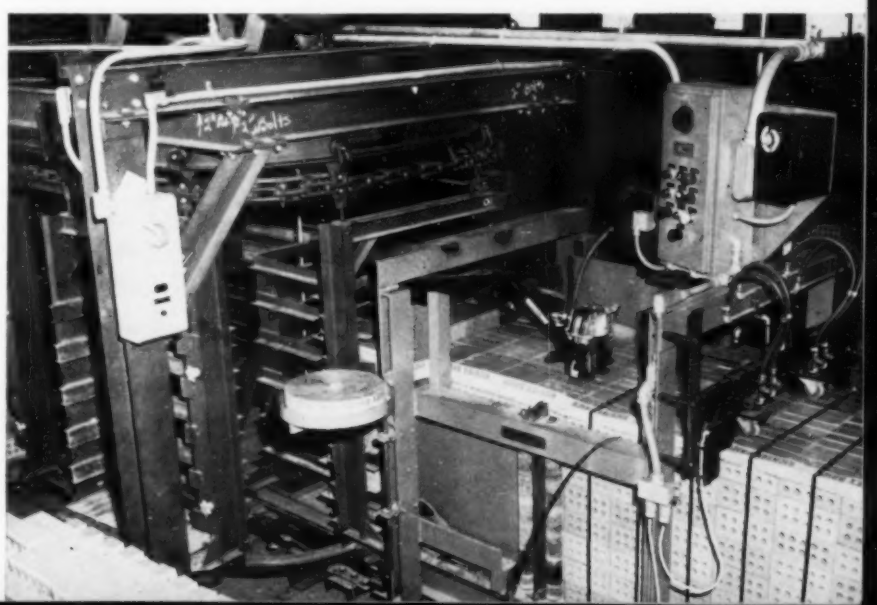
Corner protector material is applied to all four corners of the unit automatically as it passes through the machine. The strap is fed around the unit by means of a motor driven feeder. A Signode AMP pneumatic strapping machine then tensions, seals and cuts the strap requiring the operator only to push two buttons.

Depending on the type of unit that has been hacked, the final multi-pack may consist of three, four or five units. By turning a selector switch controlling heat knives to the appropriate setting, the paper will be burned at intervals producing the desired size multi-packs.

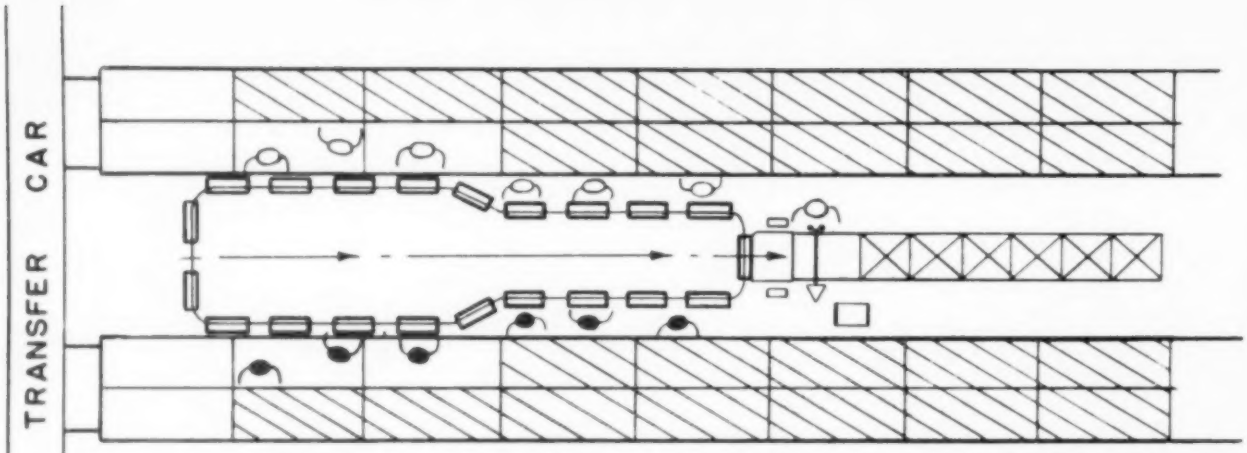
The burners were designed to sever effectively the corner protector material without leaving a ragged appearance or causing excessive moving



Above, one man operates strapping station for the now-finished brick pack. Machine is operated by push-buttons at this station and the strapper controls the entire operation. Paper corners and the strapping is automatically fed to the pack and the operator seals the pack.



Closeup of the strapping station. The time cycle can be varied by the timer in the upper right hand corner of the photo. Notice also the electric burners used to burn the paper corners as shown in the lower right.



Plan view of Signode-MECO monorail brick packaging machine. After the 6-man stacking crew empties off all the kiln cars on one line, they will move over to the other track of cars on the opposite side of monorail unit. Note shaded men shown in alternate position.

of the brick by tearing the paper. They will satisfactorily burn 3-inch wide material.

The burners nearest the operator remain in a fixed position but the other two burners must be moved inward or outward according to the width of the package. A selector switch on the control panel provides the choice of three size packs. The burners will be applied after every third, fourth or fifth unit pushed through the machine, depending upon the selection.

6-Section Conveyor

The exit conveyor is divided into six sections, each containing its own motor and gear train. It is so designed that a multi-pack will be conveyed to the farthest unoccupied section of the track and come to an automatic stop. When the preceding section has been cleared, the conveyor starts automatically and will continue until the cube of brick reaches the end of the track where it is then removed by a fork truck.

The six sections of storage conveyors are each approximately 45 inches long and are located at the exit end of the strapping station. They are designed so that all are running continuously with the exception of the first section. After a multi-pack has been completed and is resting on the first section of conveyor, the subsequent push by the pusher will cause the cube to contact a raised roller which operates a limit switch. This switch starts the motor on section one and the cube will be passed from section to section until the last one is reached, or until a filled section is encountered. In either case the cube will stop automatically and remain so until the preceding section is cleared.

The full kiln cars are moved past the brick packaging machine by means of hydraulic pushers that can be operated by controls located at either end of the machine. When one track has been cleared the men switch to the opposite side of the machine and start unloading brick from the cars on this track.

Variations of the multi-pack are possible with the Signode-MECO packaging machine. Most brick have been unitized in multi-packs of five 100-packs with all the brick positioned in one direction. A piece of corrugated paper plus a precut strap are used to bridge the fork openings. The 125-brick unit using brick to bridge the fork openings was successfully packaged in the machine, as were packages of Norman wire cut and ripple brick, Roman brick, utility blocks, oversize brick, modular brick and Norwegian blocks. The nonstandard sizes are put into units other than the standard 500-brick multi-pack.

Savings Indicated

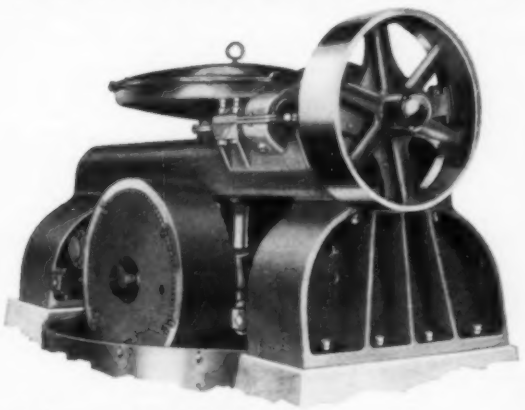
To date, several million brick have been packaged with the machine. Production figures indicate that a labor savings of 20% per hacker can be derived and savings per crew of 10% based on the total brick packaged. It is still a little too early to ascertain accurate cost figures, but as soon as efficient operating patterns are established and correct scheduling and location of kiln cars at the machine are maintained, this will be done.

Observations of the new 100-brick units after handling in the yard plus on-the-job inspections after the straps have been cut indicate the tighter pack obtained from machine packaging minimizes the amount of brick chippage formerly produced during handling and transport. The package, when used with a specially designed hand truck on construction sites, provides an easy and economical means of getting brick to the brick mason in the best possible condition.

The finished pack of five 100-brick units is conveyed to the end of the machine by motorized roller conveyors. At the end of the conveyor section, a fork lift truck will pick up the cube and deliver it to either loading or storage facilities.

CLEARFIELD

MULLER TYPE MIXERS AND GRINDERS

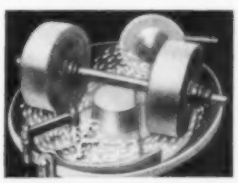


For low-cost GRINDING:

The Clearfield Maximuller, with its low maintenance and power consumption, is unequalled on the basis of cost per ton of product ground. This heavy duty dry pan is available in 9 and 10-ft. diameters and incorporates all the features essential to efficient, economical grinding. Operating on the revolving pan principle, it has ample-size screen plates in the pan bottom for better control of fineness of grind and rate of discharge. Large, heavy mullers are placed far apart to obtain the greatest possible crushing effect.

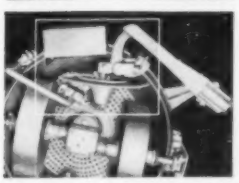
For better-balanced MIXING, BLENDING:

There is a complete line of Clearfield Mixers to handle batches of from ½ to 40 cubic feet. Here are a few of the features that make Clearfield Mixers the most efficient way to mix, blend and temper pre-ground raw materials . . . whether they are dry, semi-dry or with relatively high liquid content:



REVOLVING BOTTOM keeps every particle in the batch in continuous motion. Ingredients are alternately spread and gathered together to maintain highest mixing efficiency. Since the pan revolves instead of the mullers and scrapers there is no "lag" in the flow of material.

STAR-SHAPED AGITATOR covers the entire flat surface of the revolving bottom and prevents material from forming hard cakes or lumps. The agitator is driven by contact with the revolving bottom or the material being mixed. This creates an intense "whirlpool" action . . . speeds up the mixing process, promotes clean emptying of the pan.



DOUBLE DUTY DISC cuts all the material free from the revolving pan rim at each revolution, turns it over and diverts a continuous roll of material under the mullers. When moved to the discharge position it unloads the complete batch within 15 to 20 seconds! Saves time . . . and insures a uniform product throughout the batch.

FOR DETAILED INFORMATION, SEND FOR OUR FREE LITERATURE.

CLEARFIELD
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CLEARFIELD, PENNSYLVANIA, U.S.A.

Pacific Coast Representative:
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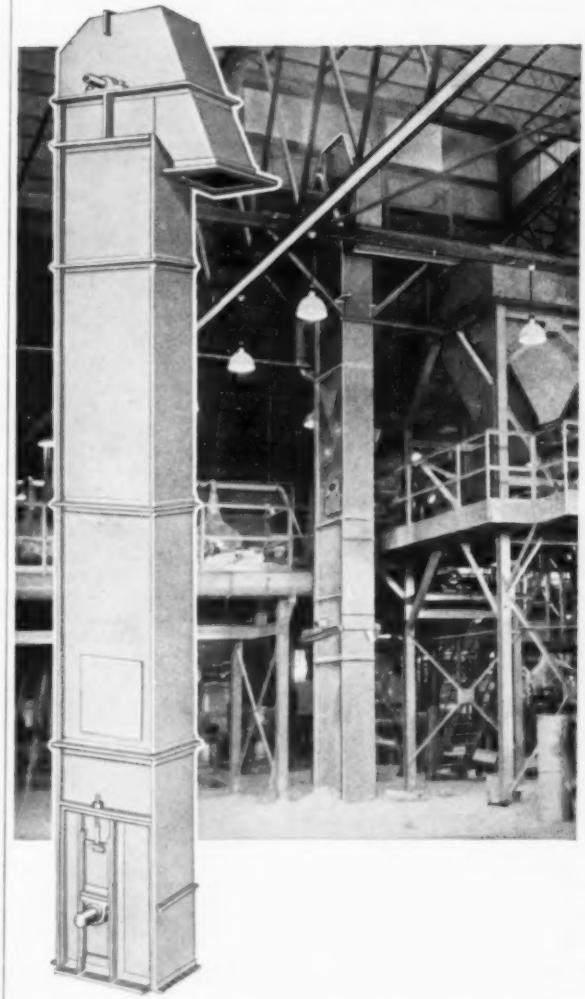
Circle Service No. 56

EHRSAM for continuous LOADABILITY!



Engineers who specify conveying systems today demand quality – equipment proven to speed processing and maintain continuous material flow. They look beyond price to design and craftsmanship. An Ehrsam bucket elevator adapts to existing equipment for easy installation. Dramatically increases productivity. Ehrsam frees you from critical design and fabrication costs and bears the responsibility for efficient operation throughout its useful life. Behind quality is management's "no-orphan" policy . . . Ehrsam refuses to abandon one piece of equipment in productive use. Ehrsam supplies a wide range of products to fit your material flow pattern . . . at your desired pace . . . for increased profits. Call one of the seven district offices below for complete information.

The J. B. EHRSAM & SONS MANUFACTURING CO.

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EI 2-461

Circle Service No. 57

Quality Booms Use of Clay Pipe

Makers See Bright Future Based on Need for Outstanding Product

Research, Promotion Activities Pay Off

F. F. Steele, Jr.
President, Pine Hall
Brick and Pipe Co.
Winston-Salem, N. C.

Certainly the need for additional sanitary sewers will increase during the next few years due to the general population increase, extension of city and town limits, enforcement of stream pollution laws and the ever improving standard of living of the American people.

The part of the sanitary sewer market that will go to the clay pipe industry will be determined by technological improvements being made in clay pipe products, availability of clay pipe when needed, price of clay pipe as compared to substitute products and the promotional efforts being made by National Clay Pipe Manufacturers, Inc., the regional promotional offices of the clay pipe industry and the individual producers of clay pipe.

It is my opinion that the research, advertising and promotional activities of National Clay Pipe Manufacturers, Inc., are paying off for the clay pipe industry. In addition, the regional promotional activities are becoming more and more effective. In the southeast, the regional promotional activities are handled by the Southern Clay Pipe Institute in Atlanta. This organization has six top flight promotional engineers working under Orville Dickinson. The Southern Clay Pipe Institute covers promotional activities from Virginia to Florida to the Mississippi River and real dollar and cents results are being obtained. I am sure that the other regional promotional organizations are also reaping the benefits of good, hard-headed factual promotion.

Let's not forget the most important promotional factor in the clay pipe industry's favor—that's the *basic quality* of clay pipe as proven time after time, year after year, under the most trying conditions.

Sees Upturn in Volume Starting in August

Hudson Hillyer
Vice-President—
General Manager
Clay City Pipe Co.
Uhrichsville, Ohio

The vitrified clay sewer pipe industry in the Uhrichsville, Ohio area has been in a depressed condition for the last three years. This condition has been brought about by a substantial decline in sales volume in the northeastern United States which itself is a result of a regional decrease in housing starts and industrial expansion. However, it is human to be optimistic and it is felt that there will be a substantial upturn in volume commencing possibly in August of this year. We believe that 1961 shipments will be approximately equal to those of 1960 and that no decided improvement will occur before midyear 1962.

We realize that the same conditions do not obtain in other sections of the country which do not seem to have experienced the business decline obvious to us in the northeastern United States.

The Uhrichsville-Ohio River area is one of heavily concentrated production of vitrified clay sewer pipe and this production must be shared in a market area which has been constantly diminishing through the construction of new plants at points nearer large metropolitan markets, such as New Jersey and eastern Pennsylvania. On the other hand, other areas of the United States contain plants which are distributed over a wider range of territory and can offer more equal market coverage.

This concentration of production in the Ohio area has certainly added to the depressed demand for our product in the northeastern United States.

West in High Gear

Paul H. Wendt
Vice-President—
General Manager
Pacific Clay Products
Los Angeles, Calif.

In discussing the status of vitrified clay pipe, I must limit my comments to the Western states marketing area of Pacific Clay Products. I believe that economic and industrial development in the Western states, as it affects our industry, may be in a more vigorous phase than in some sections of the country. My remarks, therefore, do not necessarily apply to the industry as a whole.

Pacific Clay Products has experienced a period of steady growth over the past 10 years. This trend has continued through 1960 and is expected to continue in 1961. The demand for vitrified clay pipe in our marketing area has paralleled the increase in population and industrial development of the West. I believe that this trend of increasing demand for our product will continue and may be somewhat accelerated as a greater number of the growing communities of the West reach a point when a durable and adequate sanitary sewer system becomes a necessity.

These considerations, plus the present optimism for an early recovery from the general business recession, lead me to the conclusion that we can look forward to increased sales during the next few years. The magnitude of the increase, however, will depend to a large degree upon the vitrified clay pipe industry's competitive position.

In the engineering profession, it is generally agreed that the vitrified clay pipe provides the most satisfactory and

(*continued on page* 96)

Dixie Business Definitely Looking Up

Orville L. Dickinson
Secretary-Manager
Southern Clay Pipe Institute

Business looks mighty good to those of us involved in the vitrified clay sewer pipe industry in the South. Our

members have invested heavily in facility expansion and product improvement during the past three years to meet the growing demand of an awakened area.

Heavy industry and commercial enterprise continue to move to the South and the resultant population growth demands housing and luxuries. Suburban shopping centers and new communities are springing up like flowers in May. The metropolitan area of Atlanta boasts a population of 1,000,000 people and is expected to double in population in five to seven years. This same boast is made in many areas of the South and chambers of commerce are doing an aggressive job of attracting new industry and payrolls.

This growth requires hundreds of miles of vitrified clay sewer pipe and we've geared our promotional effects to the task at hand. That is, to make sure that the progressive-minded citizenry who are building a greater South for tommorrow are not misled into using substitute sewer materials that will not last for that tomorrow.

Yes, business is looking up in Dixie —and will—for years to come!

Aggressive Marketing Program a Must

Addison Hawley
Vice-President—
General Manager
Pipe Products Division
Gladding, McBean & Co.
Los Angeles, Calif.

It is apparent that the total economic growth of this country will provide ever-increasing opportunities for the sale of vitrified clay pipe for sanitary sewer installations. Like most other industries, however, vitrified clay pipe producers are now faced with a buyer's market—a market that is offered a broad and readily available selection of materials for the purpose, and one in which top quality goes hand-in-hand with top value. Fortunately, we in this industry have the best basic quality and basic value in our product. These advantages alone, however, are not enough for us to gain our rightful share of the growing market. To do the job, we must recall the lessons of the past and reinstitute a highly aggressive marketing program.

The program, to be productive, must include all elements of marketing, not the narrow definition of just "sales." We must continue to seek out and define the ever-changing needs of our consumers; and, through innovation and development, provide products and services that will satisfy these needs in every respect. We must maintain our facilities in order to produce pipe that is higher and higher in quality at the lowest possible cost. Reinvestment of earnings into research and facilities is as much a part of the total marketing concept as is the routine call by the field sales representative.

Production of the best possible product, to satisfy the needs of the customer at reasonable cost, only provides us with the foundation for active promotion and selling. Even the highest quality product, we know, will not sell itself; and the total marketing concept must, obviously, include a highly efficient, highly productive sales and promotional

force. There is no room for "order-takers" here. Instead, the need is for more men in the field, men who are adequately trained, aggressive and creative in all of their activities. This phase of the program must be supplemented with expanded advertising and public relations activity that is well conceived, well directed and well financed.

Assuming that we, as an industry, adopt the total marketing concept as our medium and efficiently perform each of its specific functions, we can then anticipate a future of growth equal to or exceeding national economic trends.

Clay's Quality Wins Out

Ryland H. Now
President, National
Sewer Pipe, Ltd.
Toronto, Ont.

The clay pipe industry today faces increasing competition from new materials purported to be equally suitable for sewer and drainage purposes. This calls for vigilant promotion of the everlasting qualities of our product.

Due to the increased demand and the inability of the industry to take care of same, several substitutes for clay pipe have been accepted in codes and have further complicated the industry's problems in this regard.

It is commendable, however, that the increasing consciousness of engineers concerning the perfection of sewer lines has meant an increased responsibility

for quality of our product and the jointing method of same. I know that in today's market I would not care to be in business were it not for our plain end pipe and couplings and a modern factory to manufacture same. I am sure that if the industry keeps objectives of perfection ahead of it and strives always for complete knowledge of its product, devoting sufficient attention to promotion, the demand for vitrified clay will constantly increase and the upstart products will be revealed in their inherent weaknesses.

A continued stress on research, working toward not only longer lengths and stronger pipe but also improved methods of manufacture with reduced costs, is vital. The industry has shown splendid cooperation in various research groups and programs in the past and, it is hoped, will continue to do so.

Clay pipe has the test of time as proof of its right to claim it is "permanent as the pyramids." With the recognition by manufacturers that the weak link of mortar joints has been solved by improved methods of coupling and with the construction of new factories and remodeled old ones the industry will be able to meet increased market requirements, which will inevitably come from expanded pollution control agencies being established on the North American continent. This recognition of the importance of sewage treatment for the preservation of our water resources by public officials is one of the most positive indications I can see for an increasing market for clay sewer pipe.

1. Triassic shale outcrop exposed by road cut.

Let's Go Prospecting for Clay!

Prospecting has come a long way since the early days of California and the Yukon, but it is still well within the scope of anyone in the structural clay products business who is willing to follow some rules and recommendations. Our author outlines the total procedure in this article, so if you have been considering this type of activity you are now in business. This is the first in a series of articles on raw materials processing from pit to plant.

By ROY B. MOFFITT

North Carolina State College
Raleigh, N. C.

Introduction. For most people, the image of a prospector is one of a "forty-niner" leading a burro through the desert regions of the far west. A more recent and sophisticated image is the one of the highly trained petroleum or uranium geologist with a truckload of fancy equipment. All of these cases usually are and will remain outside the purpose of the small structural clay plant operator, but this does not in any way suggest that prospecting for ceramic raw materials cannot be done by an intelligent staff member of a plant manufacturing structural clay products.

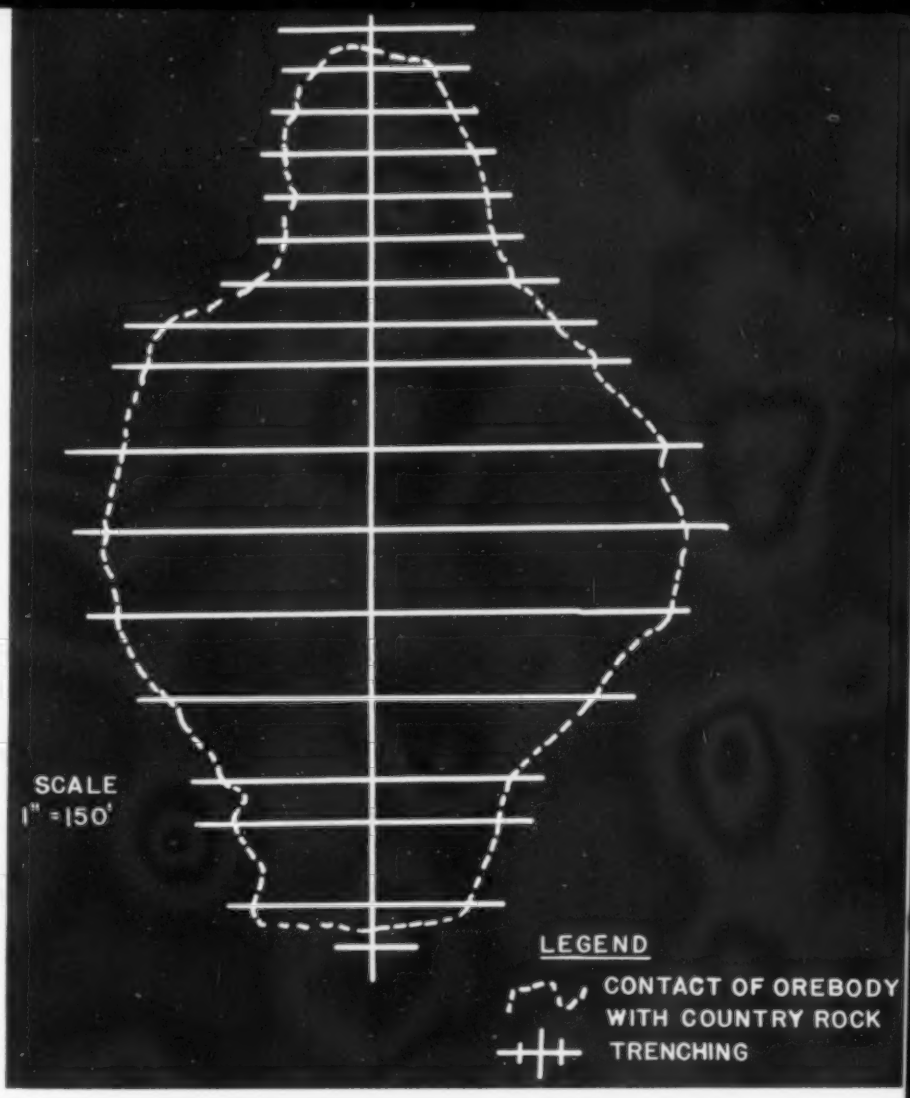
If a clay plant production program requires new or additional raw material reserves, the ones that are most likely to be sought are clay, silt stone and shale. However, there are circumstances where a requirement could develop for other materials such as sericite or trap rock. If a person is to prospect for one or all of these materials, then this individual should have a basic understanding of the geological classification and definition of the raw material or materials in question.

What Clay Is

Clay is sedimentary and is defined as any material that possess three distinct properties: (1) The material must be of a certain mineralogical composition. This requirement can be simplified to one that nominally implies that clay is a mixture of hydrous aluminum silicate minerals. For ceramic reasons the amount of quartz and lime particles, which are sometimes intermixed with the clay mineral particles, should be low. A good way to estimate the quartz content is to get a small amount of the material between the thumb and forefinger, and rub the fingers and material together. If one feels a relatively high percentage of grit, then this simple test indicates an appreciable amount of quartz. In regards to the lime, adding a few drops of dilute hydrochloric acid to the powdered material will indicate if the lime con-

2. Sericite, exhibiting platey structure, outcropping in road cut.

3. Typical trenching procedure.



tent is appreciable. If there is some fizzing after adding the dilute hydrochloric acid, then the lime in the material is usually high enough to be ceramically troublesome.

(2) To be a clay, a material must be of a definite particle size. For the purpose of evaluating this requirement in the field, particles appreciably smaller than the size of a sand grain are satisfactory in most cases.

(3) A clay must have plasticity. This simple requirement is satisfied if upon the addition of water, one is able to mold the wet material into a desired shape.

Shale is also sedimentary and is defined as consolidated clay or clay-like particles. Most ceramic operations using shale employ the weathered variety, "rotten" shale, and not the unweathered kind.

Trap rock, used in some parts of the country in place of shale as a flux, is a noncommittal term for dark felsitic igneous rocks. The term felsitic means a homogenous fine grained rock of igneous origin. One can not see the individual grains in the rock with the eye or with a low, 6 to 9-powered, magnifying glass. Trap rock is largely composed of feldspar, amphiboles and pyroxenes. The amphiboles and pyroxenes minerals, (calcium, aluminum, iron, magnesium) silicates, as well as the feldspar, act as a flux. Usually trap rock is used ceramically in its unweathered state, and most quarrying operations that produce trap rock for highway and/or aggregate purposes have fines for sale that might be usable from both a ceramic and cost point of view. Trap rock is hard, gritty and definitely nonplastic.

In some parts of the country sericite is used in structural clay bodies. Some plant operators use it as a flux. Others use it because some sericites fire "buff" or white. This material is anhydrous aluminum silicate and usually hydrothermal (igneous) in origin. It is a soft mineral in the unweathered and weathered state and thereby compatible with conventional structural clay forming machinery; however, it has one forming disadvantage in that it is not plastic. Therefore, it must be used as an addition to a plastic material in order that extrusion techniques can successfully be used.

Preparation

Preliminary Prospecting Preparation. Now that there has been some cursory understanding obtained about the geological fundamentals of the materials that are commonly used in the structural clay industry, a person can begin to systematically search for them. It would be foolish to dash off into the surrounding country to prospect for a material that is already commercially available at an advantageous price and in a desirable geographic range. It is usually wise to obtain all of the pertinent information about available commer-

(*Continued on page* 84)

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Prospecting . . .

(*Continued from page* 83)

cial sources of ceramic raw materials before spending any money or effort in prospecting.

If commercial sources are not available or undesirable for any reason, then the next step is to determine if the materials are probable within your particular geographic area of interest. Both federal and state geological surveys can be of basic help in this phase of the investigation. If these departments cannot actually send a trained man to help you in your particular search, then there is the possibility of help from a study of geological maps. These can be obtained from both the state and federal agencies, and are usually available to the public at low cost.

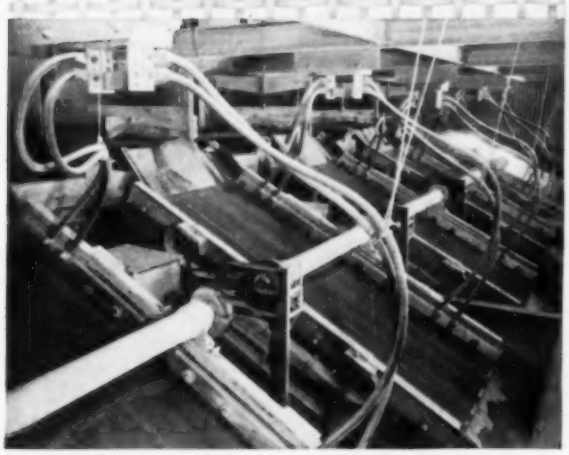
Request Information

Sometimes there are publications from the federal and state geological surveys covering general and specific locations of the very material in which you may be interested. Before any prospecting is done, it is wise to make use of all the available governmental agencies and their publications. A few hours work writing letters requesting information, paid for by your tax dollars, can save much time and money.

Identification of Raw Materials. Identification of rocks in the field is of primary importance. This statement sounds rather elementary, but there are a surprising number of people that live on this earth that do not know one rock, weathered or unweathered, from another. Hand specimens, from commercial scientific sources, are usually unweathered and therefore misleading if used as a guide for identification of weathered materials. It is the weathered rock one usually sees in the field, not the unweathered.

Mother nature is jealous of her treasures, and she covers them up with everything available, e.g. weathered products of the parent rock, dirt, leaves, vegetation, etc. If you are looking for new deposits, remember that most materials don't outcrop and thereby make themselves obvious. Being so disguised, these deposits are normally overlooked, and it is up to you to "see" through the vegetation, dirt and weathered products with intuition

this screen stays clean!



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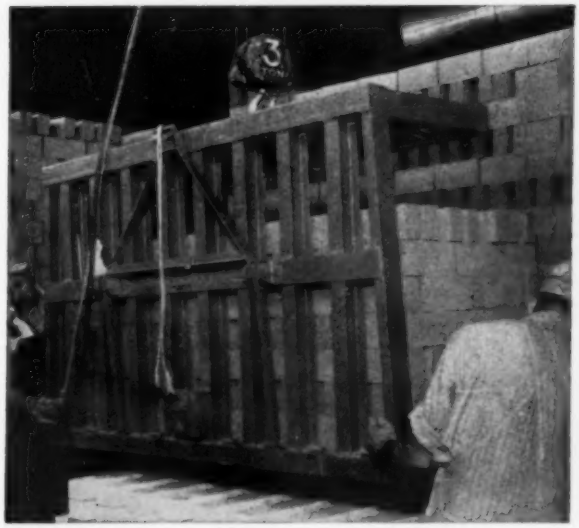

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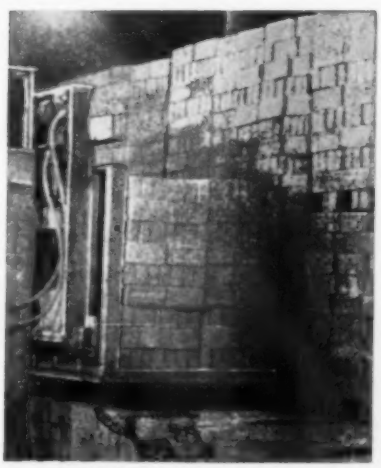

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and logic in order that the desired materials may be properly recognized.

From a practical point of view, it would be best to get an experienced person to point out the differences in physical properties of the parent material and its weathered by-product. Some local geologist or the ones available at the federal and state levels would more than likely be happy to point out to an interested person the fundamentals of identifying weathered products of a particular parent rock. No amount of printed material can adequately describe all of the different variations of rocks and their corresponding weathered materials. In this case, experience is the best teacher, and seeing is believing.

Physical Properties

However, a few basic generalities can be stated about the physical properties of the various raw materials previously mentioned. (1) Clay and silt stone are usually obvious to one who is a part of a structural clay products plant; therefore, no attempt will be made to describe means to determine their identification. (2) Shale is usually a very fine grained sedimentary rock and can be scratched in the unweathered state with an ordinary pocket knife. In the weathered state, its plasticity is less than that of alluvial clay. Figure I shows a weathered outcrop of Triassic shale exposed in a road cut.

(3) Trap rock and shale are similar in grain size and color. However, the unweathered trap rock can not be scratched with a knife. This difference in respective hardness helps to avoid the confusion of the two rocks in their unweathered state. (4) Unweathered as well as weathered sericite can be scratched with a knife, but it normally can be scratched with a copper penny as well, whereas most unweathered shales can not. Sericite is usually fine grained and appears as if it were made up of many thin sheets or plates. Its powder is very greasy and slick to the feel, similar to talcum powder, and it has no plasticity. Figure 2 shows the laminar or platey structure of sericite exposed in road cut.

Maps and Publications. After the state and federal sources of maps (both geological and topographic) and publications (pertaining to a

specific geographic-geological area or a particular raw material) have been obtained and thoroughly studied, an intelligent decision can then be made as to the most likely areas that should be investigated. It is a rare instance that the available geological maps show detail information within a given area. This information is usually general; however, the publications about specific geological-geographical areas, or specific materials, tend to be more detailed and most of the time will give highway numbers and other information. County road maps can be invaluable for geographic location purposes and are normally available from the state highway department at little or no cost. Of course the maps that anyone can get from gas stations can help. In general, the geological maps, topographic maps and geological publications about a specific material or geographic area determine the county road maps that would be needed.

Tools of the Trade

Tools of the Trade. There are several tools that are necessary in any kind of prospecting. A hammer, a supply of large paper or cloth bags, pencil, knife, simple compass and a machete are all useful. The choice between a hammer and a machete is arbitrary. The author ordinarily uses a machete because it is much easier to carry while walking, it is some kind of weapon and it can serve as a hammer where soft rocks are involved. It also is a good instrument for blazing boundary marks and for cutting away brush. A machete can normally be bought at any surplus store for a dollar or more; hence, it is cheaper than a hammer. However, it is advisable to have a hammer of some sort in the car in case large specimens of hard rock are desired or work that would seriously damage a machete is involved.

Paper sacks are preferred over the cloth sacks in the initial stages of prospecting because they are cheap, readily available and easily marked with a pencil. This last characteristic makes simple and convenient the labeling of specimens that are gathered in the field.

Never Rely on Memory

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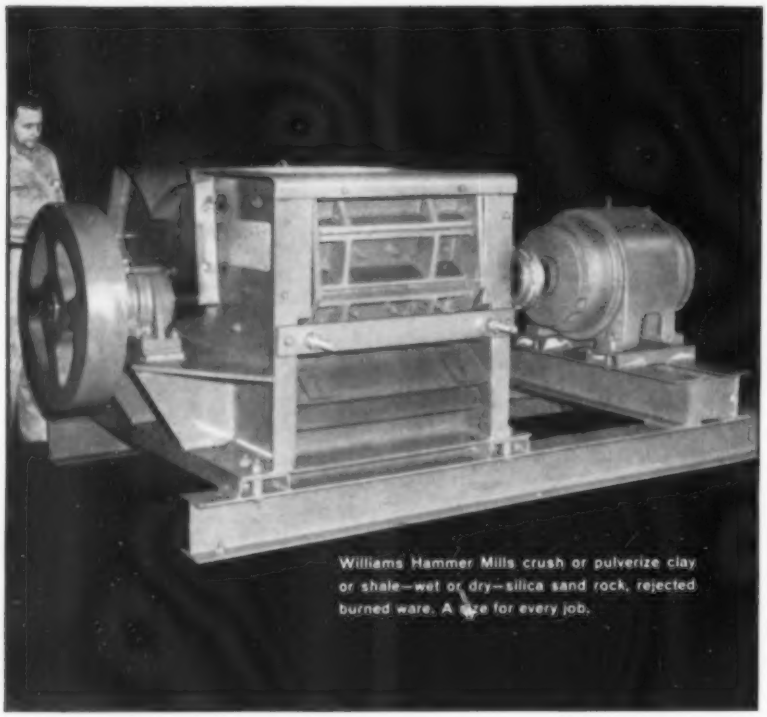
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college trained geologists have doubts as to just where a certain sample was taken simply because the sample containers were not marked on the spot. If there are large bulky samples to be taken, then cloth sacks are preferred over the paper ones, but for the initial prospecting, the paper ones are more practical.

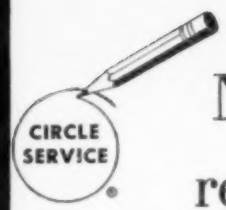
Prospecting

Actual Prospecting. It is assumed that at the start of the actual prospecting, all of the available published material previously discussed has been thoroughly studied and the proper tools of the trade are available. A study of the available geological maps is of utmost importance because these maps show the geographic location of different rock types, viz., igneous, sedimentary and metamorphic. Normally, one would look for shales, clays, and silt stones in sedimentary areas. Conversely, trap rock and sericite are usually associated with igneous and metamorphic rock areas. Therefore, a study of the geographic location of the different rock types should indicate the general area of probable success for finding a particular type of raw material. This study will usually eliminate or reduce areas for possible consideration.

Some means of transportation is almost essential if a large area is to be covered at a minimum cost. It should be remembered that prospecting is not generally done in your best car because it is usually necessary to travel over logging roads and other trails that will certainly expose any car to possible damage. A reliable but rugged auto that has had its share of dented fenders is the most logical choice.

It is usually good practice to confine your route of travel to roads that normally have the least traffic. This is where the county road maps come into practical use. A general travel rule for covering a given area is to start at the outside boundaries, or at the approximate center of an area. Then, travel as slowly as you wish over a spiral shaped course, inasmuch as the existing roads might permit, until you have covered the area in question. For a county of normal size it should take the better part of three days for a cursory examination.

As you are traveling, it is best to



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10	25	40	55	70	85	100	115	130	145	160	175	190	205	220
11	26	41	56	71	86	101	116	131	146	161	176	191	206	221
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223
14	29	44	59	74	89	104	119	134	149	164	179	194	209	224
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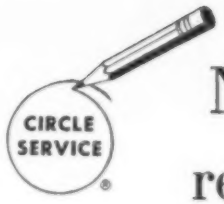

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go as slowly as time and the car will permit. Every road cut should be thoroughly examined and samples should be taken if the material looks interesting or immediate identification is impossible. Mark your approximate position on your road map with a symbol or number. Place this same symbol or number on the bag in which you put your specimen. These corresponding numbers or symbols will enable you to come back to the location with a definite knowledge that you have the right sample with the right location. Normally, chronological numbers for samples and map positions are sufficient for the location of a specific sample.

If you can not identify the material, take a representative sample and have someone who is trained as a geologist identify it for you at a later date. It is easier to throw away a sample which you could not identify in the field, but later had identified as worthless, than to wonder if you should go back after something that you purposely left behind because of ignorance or laziness. This taking of many samples accents the virtue of paper bags. Most any geologist at the state or federal level will help you in making an identification; however, keep an accurate road map record as to where the sample came from because this will help trained individuals in identifying small specimens.

Cardinal Rule

There is one cardinal rule that every successful prospector follows: Be discreet! If the local people find out that you are prospecting, their imagination takes over where common sense ordinarily would be, and land prices go completely out of reason. Most people associate prospectors with gold, oil, uranium and money. Keep your knowledge and business to yourself! If you are fortunate and find what you are looking for, then very carefully determine the ownership of the particular property. Usually, the local real estate organizations, register of deeds, or some of the local people will help. However, do not tell *why* you are interested in the property. You are just asking; do not volunteer any information!

*Exploration.*It is assumed at this stage you have found what you want and who owns the property in question. If the land is governmental,

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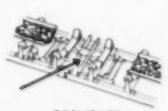
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then it is almost automatic that any use by a profit making organization will involve a great deal of red tape and politics. It is best, if it is possible, to stay away from this kind of property. If the property is privately owned, then the next step is exploration. Arrange some kind of legal agreement that states that you are willing to buy or lease the property in question at a previously agreed upon price *if* exploration shows that the right kind of material is there *in sufficient quantity*. This kind of agreement is *always* advisable.

Also, one must search the title of the property to see if in any way the mineral or property rights are "clouded." If they are, then it is advisable to avoid the property. The optimum conditions are a clear title to the land and the mineral rights. Any lawyer can search the title and draw up an agreement for exploration. This will protect both prospective buyer or lessee and owner. Legal assistance, preferably that versed in local laws and practice when of sufficient calibre and reliability, should be secured not only on question of title, but in making any important agreement such as a deed, working bond or escrow agreement. In absence of legal advice, typical forms which may be used usually can be found in handbooks that pertain to mining.

After a legal agreement has been reached as to final land price or lease agreements, a systematic surface exploration is the next step. Don't spend any money on exploration until the proper legal work is finished. An owner can change his mind about the price quicker than the wind can change. The value of surface exploration is apt to be underestimated. It furnishes information which may either discourage further effort or permit intelligent planning of subsequent work. If this type of work is feasible, it prevents overlooking important rock exposures and secures a large amount of information with a smaller total footage of openings than haphazard work.

Methods Vary

The methods of exploration vary with the type of orebody. Intelligent judgement determines the extent and detail of the work. The first essential is a map showing as much information as possible about property lines, topography, geology, outcrops, dips and strikes, pits, trenches, any underground work, raw material evaluation and all other details that are obtainable. The map should be on a scale of not less than 100 feet to one inch. For small areas, 40 to 50 feet to the inch is better.

A compass, hand level, plane table or transit are used in mapping, depending on the accuracy desired. A small plane table is convenient from an accuracy and cost standpoint, and it is rapid and relatively simple to operate. Numbered stakes may be set on corners of 100-to-200-foot squares for locating subsequent work. On the map, plot probable or actual course of faults, contacts, different outcrops and all the geology and topography that is available and practical to obtain. A map of this nature aids in eliminating unfavorable areas and in planning exploration.

For a single orebody, a series of trenches is usually dug at regular intervals at right angles to the course of an outcrop. Probable extension of the outcrop should be staked on the ground as a preliminary. The distance between the trenches is de-

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Tyler fabricates screen sections to fit all existing makes of vibrating screens, using wire cloth drawn from inventory, fabricated in a special department to give you fast delivery. Since Tyler originated the screen-tension concept, this service is backed by industry's broadest experience in producing screen sections—with special hook strips to maintain drum-head tension.

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WOVEN WIRE SCREENS • SCREENING MACHINERY • TESTING SIEVE EQUIPMENT

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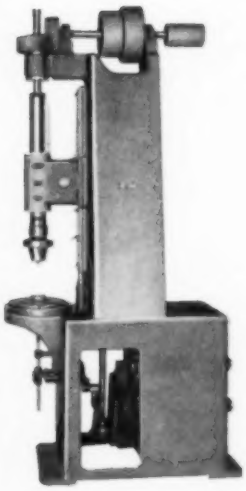

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BUILT IN 4 SIZES
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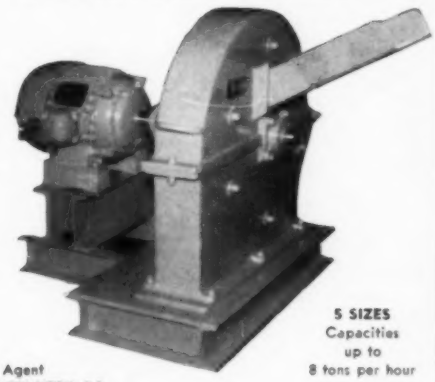

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Capacities
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Five pound samples ground to your specifications at no charge.

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"Ceramic"

GIVES YOU
DEPENDABLE QUALITY
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C-48

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termined by the type of orebody and depth of soil. The trenches should be so spaced that the average width of the outcrop may be determined. Any stringers that extend beyond the main orebody should also be trenched, but here the trenches should be closer together than those of the main area of interest. Figure 3 shows a typical trenching procedure for large or small deposits.

All exposures in exploratory work should be measured and sampled. The widths, pertinent ceramic properties such as P.C.E., etc. should be entered on the map, and a geological cross-section made where necessary to interpret structure. Results of shallow exploration may often be summarized by computing, from an area of an exposed orebody, the number of tons of profitable material per foot of depth. The depth to which the known orebody must continue in order that it may repay estimated cost of development work and equipment and still yield a profit, can then be calculated. This calculation compared with local geology and type or orebody furnishes a measure of the risk involved.

Conventional core or auger drilling, the choice depending on the hardness of the material, on 50-to-100-feet centers can give a reasonable estimate of the tonnage available. Drilling is expensive; therefore, each hole should yield the maximum amount of information. This can be accomplished by making full and intelligent use of the previous surface exploration. It is wise to test the products of the drilling operation as they are obtaiined in order that a representative sample of the ceramic properties of the material may be evaluated. *If* the tonnage is available and *if* this tonnage has the desired physical and ceramic properties, then the next question to answer is whether one should lease or buy.

Land Reclamation

Usually, if a lease is used, it is misleading to assume that the majority of the cost is a function only of the tonnage of material removed. Most land owners or state laws require some kind of land reclamation clause in a lease agreement. This kind of clause is fair and just because no one wants to be left owning a large hole in the ground. This definite possibility of land reclamation has to be determined in the actual over-all cost of the material. Generally, it is best to buy the property, if the capital is available, quarry the desired material and fill the resulting hole with water to form a lake or pond. This final act usually increases the real estate value of the original property, and thereby presents the probability of making a profit out of a previously unsightly hole in the ground.

A word of caution must be offered here about ground water. If any mining operation is near a major drainage system, which is simply an outcropping of the ground water table, then it is wise to consider that the amount of material one could profitably remove is that which is normally *above* the ground water table. In any mining operation there is the definite probability of water accumulation. Therefore, an optimum condition is one where profitable mining does not have to be pursued below the average elevation of the ground water table.

Summing Up

Summation. There is no easy way to prospect for any type of raw material. However, the essentials of

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- Hydraulic feed for fast, smooth, dependable easy operation
- Mounted on 3 wheel chassis or truck
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Model HV-172

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PARIS, ILLINOIS

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prospecting for ceramic raw materials normally used in the structural clay products industry have been briefly discussed from a layman's viewpoint in hopes that certain major pitfalls might be avoided. Before any legal agreements are signed, it is good procedure to obtain a professional geological evaluation of the property in question. Private organizations in most cases are rigorous and thorough in their work, but expensive. An evaluation made by state or federal level geologist in most cases is cursory and on a gratis basis. If the geology is simple, a cursory estimate of the orebody may be all that is necessary; however, if the geology is complex, a comprehensive evaluation is the most logical choice.

Conclusion

In conclusion, there are two items that are of general importance in the prospecting profession: (1) "Gold" is where you find it, e.g., a particular material is not necessarily where it should be. (2) The personality of a successful prospector is composed of variable proportions of an incurable curiosity, an unlimited source of patience, a dogged determination, a complete disregard of failure, a conservative evaluation of facts, a manner of dress and talk that is compatible with rural populations and a nonextiguishable source of hope.

Good luck and good prospecting!

See Good Year At Athens Brick

F. L. Robbins was re-elected chariman of the board of the Athens Brick Co., Athens, Tex., and H. B. Sampson was reelected president at a meeting of the directors recently. Other officers are Mrs. LaNelle Boldt, secretary, and F. L. Coats, treasurer.

The annual report showed the company had a good year with a sales increase, and stockholders and directors were optimistic over the prospects for another good year.

Elect Board Member At A.P. Green Fire Brick

William S. Lowe, president of the A. P. Green Fire Brick Co., Mexico, Mo., has announced the election of J. J. Offutt to the company's board of directors. Offutt, vice-president and general manager of the company, will fill the unexpired term of H. W. Peterson Sr., who recently resigned after 11 years as a director. Peterson's resignation was prompted by reasons of health.

100,000 Brick a Day Made By Wallapai Brick

Some 100,000 brick a day roll off the conveyor belts at Wallapai Brick & Clay Products Inc., Phoenix, Ariz.

Hawaii Firm Ponders Clay Pipe Production

A new firm, Alii Enterprises, Honolulu, Hawaii, is studing the feasibility of manufacturing clay sewer pipe in Hawaii.

William J. Haymaker Sells Brick Interest

It was recently reported that William J. Haymaker has sold his interest in the Dalton Brick & Tile Corp., Dalton and Atlanta, Ga. No immediate plans for the future have been made by him as yet.

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SPECIALISTS IN AUGER TYPE DRILLS

NOW . . . GREATER DRILLING POWER

A DRILL THAT DOES THE JOB FASTER AT LESS EXPENSE TO YOU!

MODEL F-86B
Mounts on any ½ ton or larger truck

- Full 6′ twin hydraulic cylinder feed for faster drilling and more pulling power.
- Simplified control. All controls are centralized at rear of drill.
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MODEL F-86
Jeep mounted

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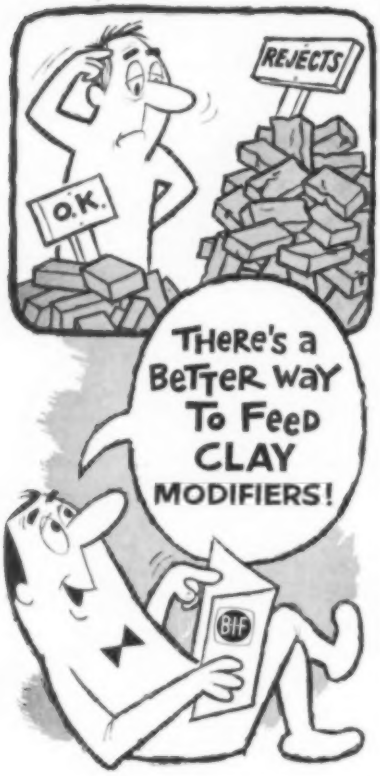
BIF POSITIVE CONTROL OF MATERIALS FLOW



Wasting coloring agents, body conditioners, flocculents, binders and fluxes? Getting too many rejects? Production costs too high? Profits low? B-I-F feeders proportion brick and clay process materials . . . continuously . . . automatically . . . with the accurate reliability to suit the most rugged service demands!

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407 HARRIS AVENUE, PROVIDENCE 1, RHODE ISLAND
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Low Cost . . .

(*Continued from page* 65)

firing curve, depending on the type of brick being burned. All the fuel, as well as all primary and secondary air, is introduced in the bottom of the setting through five rows of 140 small gas burners each, making a total of 700 burners.

The setting of the kiln proper is an 8-brick-wide setting. Currently the company is setting its soft-mud brick in the kiln to a height of 20, although with the flat-crown of the kiln it is possible to set as high as 24.

The crown of the kiln is dampered to allow cooling if necessary. The cooling air is also admitted through the bottom of the hearth by natural draft, the amount of which is determined by the damper opening in the crown.

One door on each end of the envelope kiln is raised when the envelope is moved from one hearth to the other. The doors are powered by a ¾-horsepower motor equipped with a brake. The envelope itself is also propelled with a ¾-horsepower gearmotor, and runs on a rail located on each side of the hearth.

After the burn has been completed, the brick are removed from atop the hearth by a fork-lift truck equipped with Bickerstaff type forks. The entire unloading procedure takes a little less than two hours, as does the loading procedure.

From the kiln, the brick are conveyed to a sorting and strapping station where they are graded and packaged for shipment to the customer.

Sewer Pipe . . .

(*Continued from page* 80)

durable material for sanitary sewer systems. We have an inexpensive basic raw material and a highly satisfactory finished product. Our problems lie in the development of efficient manufacturing processes which reduce fuel consumption and manpower requirements. I believe that such improvements will be realized in the next few years through the employment of advanced control technology, mechanization and by the application of recent advances in our knowledge of ceramic and solid state phenomena.

At Pacific Clay Products, it is our plan to continue our program of plant modernization to increase production efficiency. We also plan to pursue a vigorous research program through industry-wide research organizations and in our own laboratories. In our sales

get the proper perspective on storing refractory materials

MARIETTA
INDUSTRIAL SILO STORAGE SYSTEMS

Don't let old-fashioned bulk storage methods cut your profits through ground storage losses . . . inefficient small bins . . . time-consuming bag handling.

Today . . . there's a better way to store refractory materials because Marietta custom designs each industrial silo system to precise storage needs and to fit any materials handling system . . . new or old. That means ideal protection for bulk materials; maximum convenience in storage and handling of large quantities. Marietta systems eliminate fire hazards and cut insurance costs, too. It will pay you to investigate Marietta's complete "one-responsibility" package . . . plan, design, fabrication and erection. That . . . and the fact that only Marietta makes 4 types of concrete staves . . . assures you the right system to meet your exact bulk storage needs. For full information, write

Marietta
AM CONCRETE DIVISION
AMERICAN-MARIETTA COMPANY
Marietta, Ohio
Representatives in principal cities
Circle Service No. 71

INTERNATIONAL

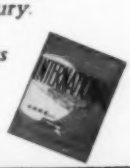
BUILDERS OF BETTER INDUSTRIAL CARS FOR INDUSTRY

KILN • TRANSFER • DRYER CARS

There is a reason why the ceramic industry shows an overwhelming preference for INTERNATIONAL cars. They are engineered and designed with full knowledge of the heavy loads, severe operating conditions and unusual performance that will be required of them.
Whether the need is for KILN, DRYER or TRANSFER cars . . . be sure they carry the name INTERNATIONAL for maximum service with minimum maintenance.
Remember the name INTERNATIONAL . . . *the leader for over half a century.*

Informative literature and catalogs available upon request.

THE MOST RUGGED INDUSTRIAL CARS BUILT



INTERNATIONAL CLAY MACHINERY, INC.
1335 WEST 12th ST., ERIE, PENNSYLVANIA

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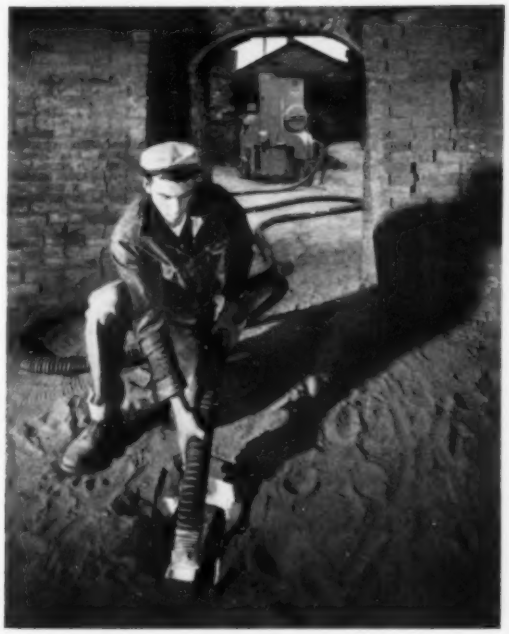
Hoffman saves 80%
ON LABOR COSTS... INCREASES BRICK PLANT EFFICIENCY 20%



portable HOFFCO-VEYOR provides fast, safe conveying and cleaning

THE PROBLEM

In this plant, brick chips and sand falling into flue openings of periodic kilns regularly cut off the draft necessary to maintain 2000° temperatures. To maintain production schedules, kilns had to be cleaned at temperatures of over 100°F. Despite the use of special gloves, fingers and hands were often bruised and burned. Rejects and labor costs were extremely high.

THE SOLUTION

The answer to the problem was the HOFFCO-VEYOR 100. With this 10 HP portable, a kiln can be thoroughly cleaned in an hour—be free for maximum production in one-eighth the time formerly required. Suction cleaning of chips from clogged flues and jammed walls is accomplished by one operator working from a safe vantage point. The painstaking job of uncapping and recapping pits, mass brick shifting and tedious hand removal of chips are all eliminated. The HOFFCO-VEYOR does the job quickly and efficiently.

For detailed information on ways and means the HOFFCO-VEYOR can cut labor costs—increase efficiency in your brick plant, write for case history and specifications.

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A SUBSIDIARY OF HOFFMAN INTERNATIONAL
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For Heat Measurement

Use the Bell PYROMETRIC SYSTEM

CONE PLAQUES

. . . for rapid loading and setting of cones in kiln. Solid base and center break so plaque can be used for two or four cones.

BELL FIRE-CHEK GAUGE

gives quick, accurate measurement.

FIRE-CHEK KEYS

. . . here accurate heat measurement is simple. Center hole design permits easy draw trials.

CONES

. . . the true guide to the end point in firing and heat distribution in your kiln.

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REDUCE WASTE • SAVE DOLLARS

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no more downtime to replace connectors...

HANCO FLUX POWER SCREEN HEATERS

transmit power through the air!

With the all new Flux Power by Hanco all mechanical connections between transformer and screen are eliminated. The 0 to 4000 ampere current is transmitted through the air by inserting a conductor through the eye of the transformer. This permits unrestricted vibration, maximum power transmission and true screen balance.

5 YEAR GUARANTEE

★ Dust-tight, waterproof construction
★ Dual voltage, 220/440 volt
★ Use either plain or stainless cloth
★ Anti-magnetic steel side rails

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HANCO INTERNATIONAL
6 WIBAUTSTRAAT • AMSTERDAM, HOLLAND

Circle Service No. 75

effort, we plan to provide maximum technical service for our customers. Our engineering staff will actively assist and participate in the solution of design and field installation problems to insure economic installation and trouble-free performance of our product. We know that further growth of the virtified clay pipe industry can be achieved only if the high quality of our product is maintained. We plan to continue our effort to improve further the quality of pipe produced in our plants.

Sales of vitrified clay pipe equipped with mechanical joints have increased considerably during the past year. Pacific Clay Products can now supply pipe with mechanical joints in all sizes ranging from four inches through 42 inches. In the smaller pipe sizes, polyvinyl chloride is the material with which the mechanical joints are made. Polyurethane is used in the large pipe sizes.

We expect that clay pipe with mechanical joints will in the future constitute an even greater percentage of our total production. We have equipped our plants with the most modern facilities for the application of mechanical joints to large as well as small diameter vitrified clay pipe.

I am confident that the vitrified clay pipe industry in the Western states will continue to grow during the next two years and look forward to the active participation of Pacific Clay Products in working with the industry to meet the demands of the market for high quality vitrified clay pipe.

Basic Refractories . . .

(*Continued from page* 63)

substantial coating offers good abrasion resistance and resistance to spalling, which are major factors. All these features give the desired larger hot zone lining life and lower the cost per barrel of cement.

The copper industry was a pioneer in the use of basic roofs in reverberatory furnaces. It is interesting to note that there is now a trend toward the greater use of oxygen in these furnaces which may mean a trend toward more basic refractories. Basic refractories have long been used for lining copper converters.

Looking at the immediate future, we expect higher refractory performance to continue to the great advantage of the furnace operators. At some point in the future, basic refractories consumed per ton of steel produced may very well level off. Of course, the total sales volume of basic refractories will also be affected by steel production rates as well as greater use of these products by other industries.

- **Fluorspar**
- **Magnetite**
- **Chromite**
- **Manganese**

NATIONAL PAINT & MANGANESE COMPANY offers the following advantages:

1) Two producing plants strategically located at Brownsville, Texas and Lynchburg, Va. Complete inventories are constantly maintained at plants and Lindale, Texas warehouse.
2) Technical representatives backed by modern research facilities coupled with 66 years of experience present a backlog of unparalled information that is available to the brick producing industry.
3) Comprehensive quality control beginning with ore source and continuing throughout processing has been established to assure uniform product to customer's specification.

Serving the building brick industry is our business—not a sideline.

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Chase Kiln Car loaded with glazed tile and ornamental screen tile at The Claycraft Company's Columbus, Ohio plant. Total load on car, including fire brick, is approximately 12,000 pounds.

CHECK THESE FEATURES:

- Wheels made in our own foundry, with a deep, uniform chill (400-450 Brinell)
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- Final assembly checked for perfect alignment before cars leave our plant

Stack 'em

HIGH, W-I-D-E and *SAFELY* on CHASE KILN CARS

Back-up tile or ornamental shapes . . . they're all safely handled on smooth-rolling Chase Tunnel Kiln Cars. Precision-built to give years and years of satisfactory service, with trouble-free running gear designed not to wobble or sway.

Send your drawings or specifications for a prompt estimate, or ask our Engineering Department to adapt a standard car to your particular needs. Chase Kiln Cars can be built to fit any size, type or make of kiln.

WRITE FOR CATALOG

Chase FOUNDRY & MANUFACTURING CO.
2350 Parsons Avenue • Columbus 7, Ohio

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For More Profits . . . Cut Screening Costs.

Clays and shales are screened most economically with the Leahy® Screen. Here is why:

- Differential vibration at 1600 v.p.m. snaps wedging particles loose . . . particles not dislodged with ordinary vibration.
- FlexElex® heating keeps the mesh dry and wide open for full capacity screening at all times.
- The outboard transformer is connected to the jacket through power-saving bus bars that completely eliminate bothersome flexible connectors.
- Jackets are changed quickly by loosening jacket bolts only—no other electrical connections to break or remake.

THE Leahy SCREEN
NO-BLIND VIBRATING

— offers —
INTEGRATED HEAT SCREENING

For full information, send for Bulletin 16-EH.

THE DEISTER CONCENTRATOR CO., INC.
The Original Deister Co., Est., 1906
913 GLASGOW AVENUE FORT WAYNE, INDIANA

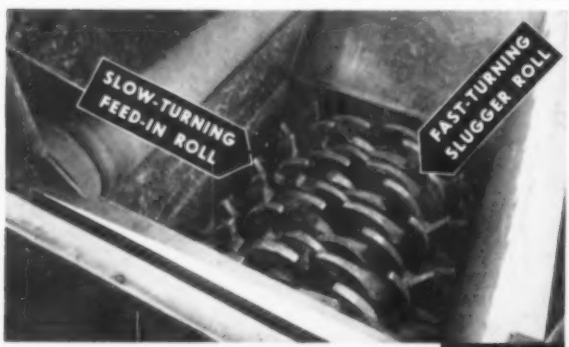
Circle Service No. 78

Bonnot's 'New Look' Revamps Facilities

Visitors to the Bonnot Co. plant in Canton, Ohio, are finding an "entirely new look and concept of clay processing" as a result of the expansion and modernization program announced by C. W. Enyart, who became president when the Bonnot Co. was purchased in May, 1960, by the C. L. Gougler Machine Co., Kent, Ohio.

One of the major phases of the "Bonnot concentration on clay" program covers a greatly expanded testing laboratory for extruding, mixing and pelletizing research. Floor space has been doubled and the range of equipment has now been enlarged and is continuously being augmented in order to provide the latest in analysis and testing instrumentation. Services of the lab and technicians are available to industry.

Same day shipment of normal wearing parts is announced by foundry superintendent Joseph Johnson as a direct result of an enlarged parts inventory.



THE EAGLE IS THE CRUSHER WITH THE BIG APPETITE!!!

The slow-turning feed-in roll and opposing fast-turning slugger roll positively break up clods of clay or shale as fast as the rolls can get their teeth into them.

Clays or shales are crushed down to ideal size for feeding to dry pans, grinders, or smooth rolls.

The exclusive cutter-crusher-hammermill action of the Eagle Clay Crusher plus its low maintenance cost, is saving money for a great number of brick and tile, refractory, and sanitary ware plants. Three sizes. Send for Bulletin 952.

THE EAGLE LINE

GRINDERS

CLAY CRUSHERS

SHALE PLANERS

SINCE 1872
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EXPERIENCE, PROGRESS, SERVICE SINCE 1872
EAGLE IRON WORKS
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Circle Service No. 79

GRAVELY KILN CAR TRACTOR

PUSHES COSTS DOWN!

MOVE LOADED CARS WEIGHING OVER 100,000 LBS!

The 6.6 hp Gravely "Kiln Car" tractor is specially adapted to move your cars in and out of tunnel kilns, spot to off-bearing belts or storage areas.

Gravely engineered the new tractor exclusively for brick and ceramic plant use, after serving the industry for years. The tractor features a customized Front Hitch to fit *your* cars!

Gravely Users Report: (Gravely) is "small enough to get around among the crowded tracks, yet powerful enough for the job of moving the cars." R.R., Jackson, Miss. "We can recommend it (Gravely) very highly to other manufacturers in the industry." A.L., Gorham, Maine. *Investigate For Yourself!*

30 GROUNDS MAINTENANCE TOOLS!
Extra Dividend! The same Gravely Tractor powers 30 year-round *ground maintenance* tools.

FREE LITERATURE—DEMONSTRATION!
Send for special "Kiln Car Circular" and "How To Cut Costs" catalog. See on-the-job pictures and detailed information on Gravely Equipment. Ask about a Free Demonstration!

GRAVELY TRACTORS
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3666 DONIPHAN DRIVE

Air Floated & Granular Manganese

Now Ready to Supply
You With Ground
MANGANESE
To Any Mesh Desired
from our Modern Plant

IMMEDIATE SHIPMENTS IN BULK OR BAGS FROM WAREHOUSE STOCK

- HOPPER CARS
- 100 LB. PAPER BAGS

Ore from

AMERICAN MINERALS, INC.

assure you the most complete range of specifications. Consistency and Dependability

"MINE TO MILL TO MARKET"

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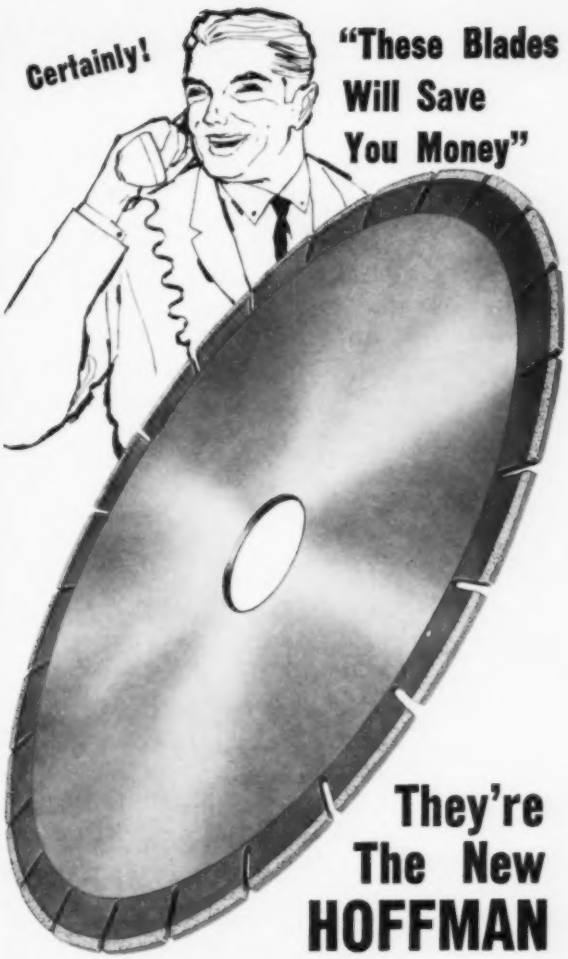

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Diamond Segmented

CIRCULAR SAW BLADES

They cut through practically every abrasive material known . . . frequently do the job in a fraction of the time required with ordinary equipment. Hoffman Segmented Blades are currently setting new production records in sawing hardest concrete, chrome, granite, silica brick, marble, Monofrax®, KX-99®, Zae®, Findley Clay® and many others. Fast, accurate sawing is producing new production techniques . . . holding processing costs to a minimum.

Hoffman Saws are available in 14 different cutting edge matrix bonds . . . each one produced to do a specific cutting job best. Accurate diamond impregnation plus special segment design assures fast cutting. Under correct power consumption and fluid control. Customer's material samples tested At No Charge to determine best Hoffman Saw for a particular job.

Write for Illustrated Literature and Prices—*FREE*. Ask for data on other Hoffman Diamond Products.

HOFFMAN BROS. DRILLING CO.

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Headings such as "Wanted", "For Sale", etc. and address to be counted as part of the ad. Minimum charge $3.00 each insertion.

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FOR USE OF BLIND ADDRESS: (Care of BRICK & CLAY RECORD) count as 15 words to cover cost of handling and forwarding replies.

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BRICK and CLAY RECORD
A CAHNERS PUBLICATION
5 S. Wabash Ave., Chicago 3, Ill.

WANTED—HELP

NIGHT Superintendent. Experienced man in structural clay products manufacturing. Hours 3:30 to midnight. Salary open. Plant location, Summerville, Penna. Write Hanley Co., 1 Gateway Center, Pittsburgh 22, Penna.

SALESMEN: Interested in rounding out their line with allied line of brand name marble floor and wall tiles. Contact Furstenberg & Co., 156 Fifth Ave., New York 10, New York, Phone CH 3-0900.

WANTED—Ceramics Engineer, good business ability, ten or more years experience Brick Production tunnel kiln. Acquainted with all phases of drying and firing of clay. Write Box 5-BHS care of Brick & Clay Record.

POSITION WANTED

CERAMIC ENGINEER—10 years management experience in structural clay products, 4 years as superintendent. Broad background in budgeting, forecasting, union-management, plant production including liaison between sales and production. Write Box 6-BHZ care of Brick & Clay Record.

MAN 35, Twelve years experience all phases silica and common brick manufacturing. Heavy on production, inventory control, production planning. Desire supervisory of production management. Relocate. Write Box 6-BGO care of Brick & Clay Record.

SPECIALIST in brick distribution sales and promotion. Knowledge of construction and licensed engineer. Will consider relocating in Middlewest preferred. Write Box 2-BAR care of BRICK & CLAY RECORD.

SALES Manager with refractory contacts in all steel mills located in Illinois—Indiana—Ohio—Missouri and Pennsylvania. Twenty five years experience in refractory sales and installations to steel industry and major consumers also combustion experience. Licensed professional engineer in state of Illinois. Write Box 2-BAP care of Brick & Clay Record.

POSITION WANTED

WANTED—Job for ex-Superlite unloader salesman. Over 6 years field experience in 7 states northeast region. Extensive familiarization with packaging, manufacturing, trucking, marketing, sales promotion, in both plant and job handling techniques. Same knowledge of concrete industries. Age 38. Excellent health. Family. Will relocate for final permanent employment. Currently employed. Resume on request. Industry wide recommend available. Write Box 6-BAZ care of Brick & Clay Record.

WANTED

WANTED—Face brick millrom mechanic having exceptional knowledge of dies. Immediate advancement is possible. Replies will be treated confidentially. Address Box 4-BEC care of Brick & Clay Record.

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McLANAHAN & STONE "PIONEER" 21" x 42" Single Roll Crusher. E. L. Klinger, P.O. Box 306, Elizabethville, Pa. Phone EN 2-8656.

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New, never been used, 1—McLanahan and Stone 18" x 36" Class B. Pioneer type swinging breaking plate single roll crusher. Grooved pulleys. Will sell for 10% less than cost. Can be seen at Dixie Brick Company, Columbus, Georgia.

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1—9' Stevenson dry pan, excellent condition.
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3—MECO Reciprocating Plate feeders & Power units.

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FIVE assorted brick dies, ' hollow tile-patio die and roman brick die.
ONE, Steel No. 40-E combined de-airing machine
ONE, Real Hand cutter.
ONE, Steel No. 18 Automatic Cutter.
ONE, International De-airing Combined Falcon, with extra liners knives, pinion shaft resurfaced augers—good condition.
ONE, American Automatic No. 858 Automatic Electric Cutter good condition.
TWO Fernholtz 48" cage type ulverizers, one SK.F. bearing the other water cooled babitted bearing, all good condition.
ONE, No. 1 and No. two Paird Pot Machines with seven pot dies, all good condition.
ONE, Model W.6422 4½ x 4 twin cylinder water cooled Quincy Vacuum Pump excellent condition.
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1—5000 capacity Fontaine mounted on 450 GMC truck
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1—Gleason Portable Shredder with Slinger belt assembly—good condition

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MISCELLANEOUS

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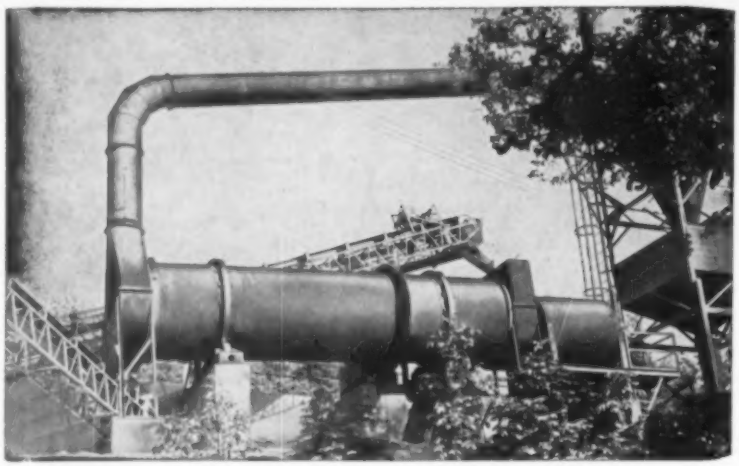

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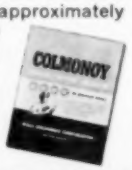

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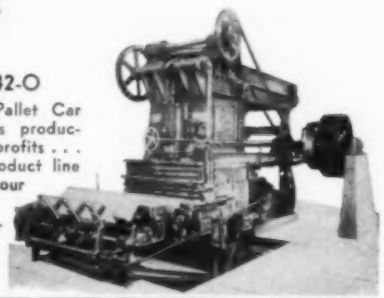
and automatic Pallet Car Loader. Increases productivity . . . boost profits . . . diversify your product line . . . expand your market.



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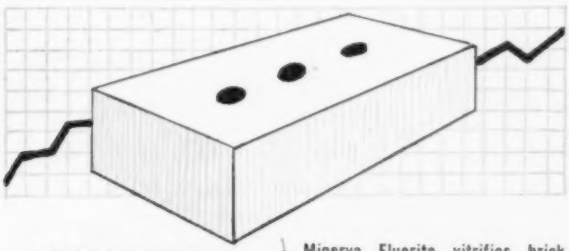

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Particularly needed where delicate color control makes hard firing and resulting vitrification objectionable.

Large stocks of standard grades warehoused for prompt shipment.
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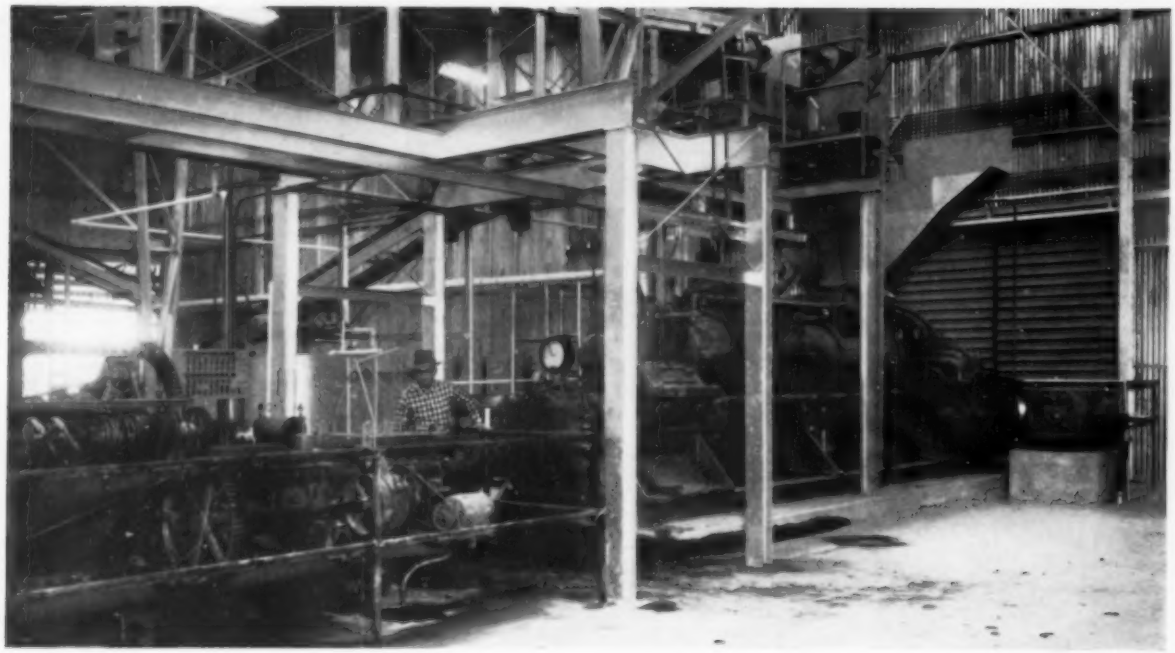

Acme Brick Company Installs

another STEELE machine

Acme Brick Company of Fort Worth, Texas uses STEELE extrusion machines and STEELE automatic cutters in most of its plants. We are proud that Acme selected STEELE machines for the new installation at their Malvern, Arkansas plant shown above.

At the right is a STEELE 60FDV machine which pugs twice, seals and shreds twice, and de-airs twice. To the left is the STEELE No. 18 automatic cutter. Acme's control panel board is just beyond the cutter. From this central position control is maintained over clay feed, water feed, pugging, extrusion, cutting, and other machine room functions.

This is an excellent installation at a fine plant of one of the world's leading producers of structural clay products.

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SCPI THE BEST IN CLAY MACHINERY SINCE 1889

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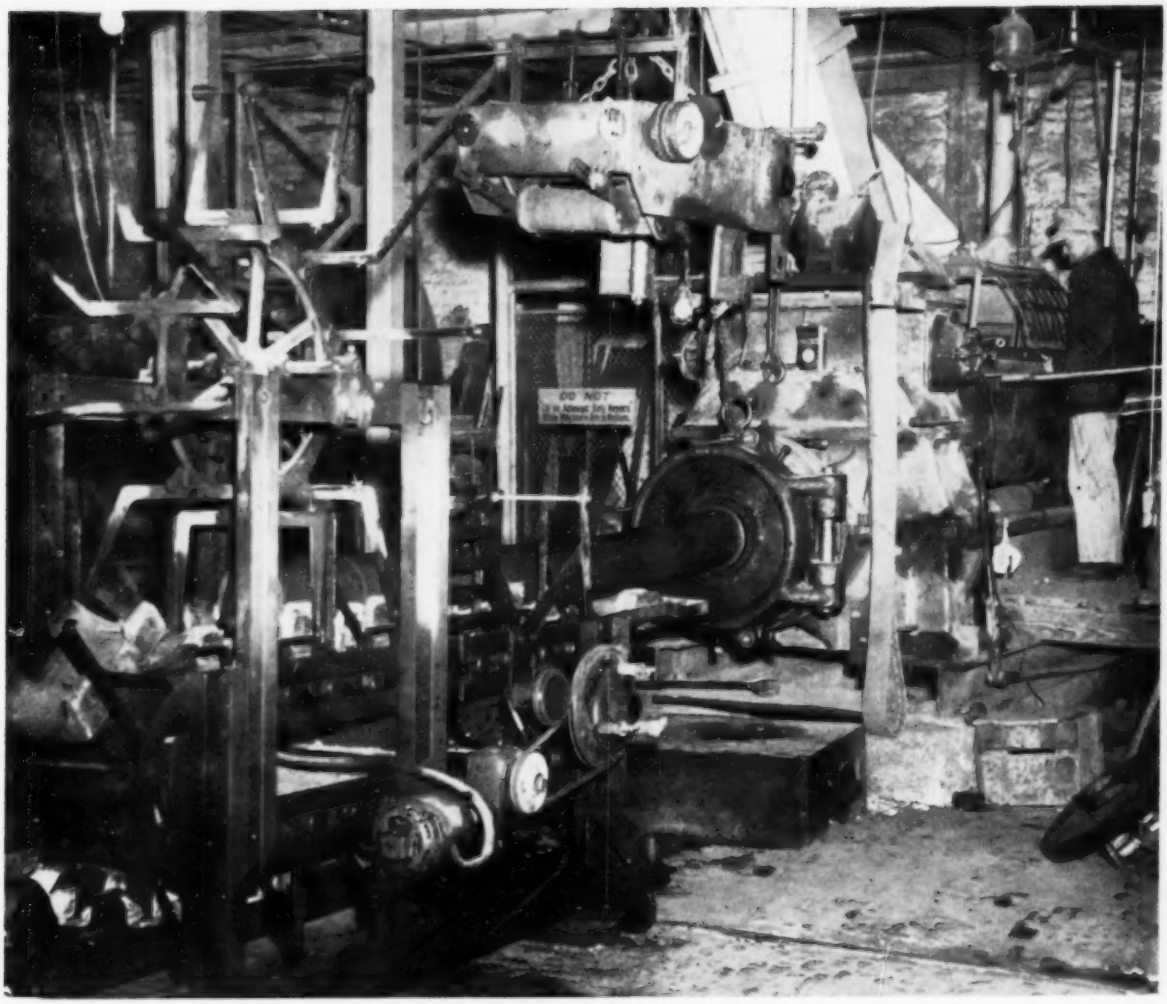

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Reports Vincent Clay Products Co., Fort Dodge, Iowa

"Since our company first began operations, in 1913, we have used F-R-H Brick and Tile Machines continuously," states Mr. Mark Taylor of Vincent Clay Products Company, Fort Dodge, Iowa. "At present, we are using an F-R-H Type 7 Junior De-airing Extrusion machine purchased in 1936—and two F-R-H Automatic Cutters.

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F-R-H

CERAMIC MACHINERY

For 100% Operating Efficiency—Order Genuine F-R-H Replacement Parts Directly from The Factory

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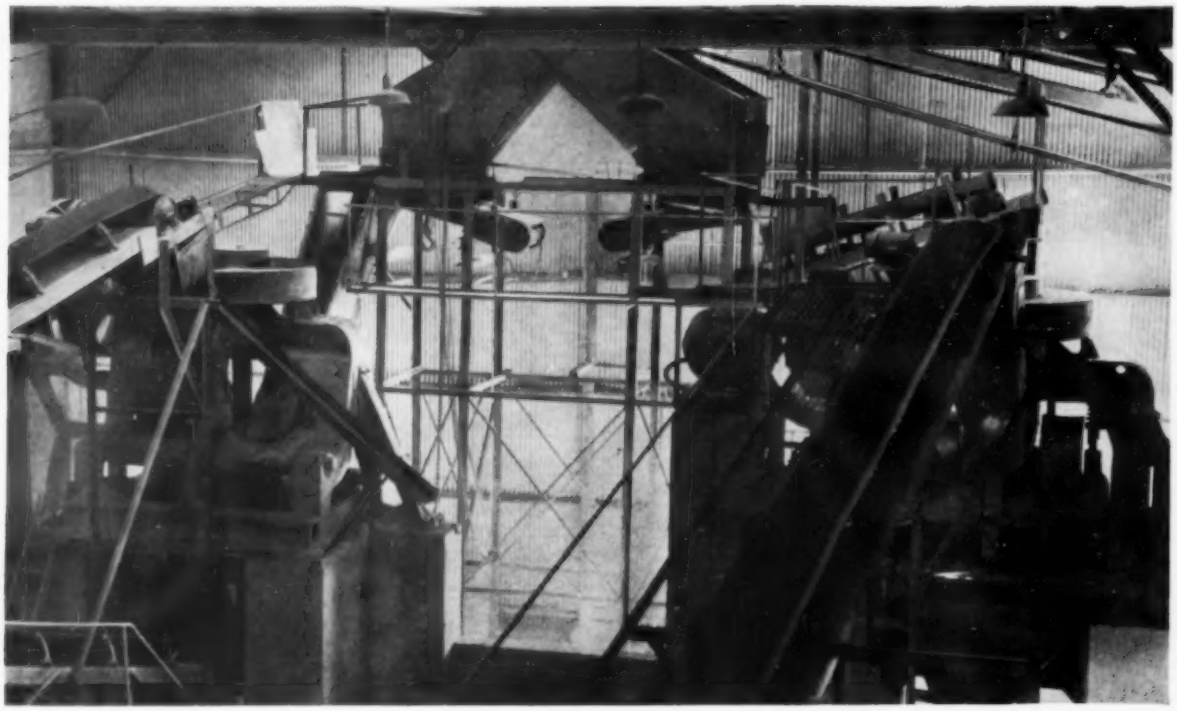
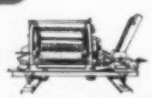
For Increased Profits...Look to American



American
CLAY MACHINERY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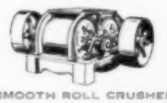
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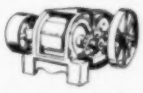
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PUG MILLS

GRINDERS

COMBINATION DE-AIRING MACHINES

DIVISION OF
HUBER-WARCO COMPANY - Marion, Ohio, U.S.A.

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